Remarks
ON
PARALYSIS OF THE MOVEMENTS OF THE TRUNK IN HEMIPLEGIA,
AND THE MUSCLES WHICH ARE AFFECTED.

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THIS paper is intended to show that in some cases of hemiplegia—let us say left—the trunk muscles of *each* side act weakly when they take part in left-sided movements, and the same muscles act normally when they take part in right-sided movements; also that the movements of the trunk requiring bilateral action of muscles are very little, or not at all, affected. The question is discussed of the change in representation of one and the same group of muscles from one hemisphere to the other accordingly as they act in right-sided or left-sided movements; and also the question of the representation of movements requiring bilateral action of muscles in one or both hemispheres.

The condition of the muscles of the trunk in hemiplegia and the question whether the movements in which they take part are paralysed or not has always presented considerable difficulty. In this paper I propose to describe a case of hemiplegia in which certain movements of the trunk were defective, so that, amongst other defects, the patient fell towards the hemiplegic side in trying to sit up; to analyse the muscles which take part in these defective movements; to compare these voluntary movements with those produced by morbid conditions in man, and with those elicited by cortical electric stimulation in animals in reference to representation of the movements in one or both hemispheres; and to describe the methods of ascertaining these defective movements in man.

The patient was under my care at the Great Northern Central Hospital. According to the notes of Mr. Clayton, the house-physician, he was aged 52, married, a confectioner, but twenty years ago was a soldier in India. He had had gonorrhoea, but there was no history of syphilis and no history of alcoholism. He had a fall from a bicycle a week before the onset, which was sudden, without loss of consciousness, and he lost power in the left arm and leg. On admission, there was no facial paralysis, the ocular movements were normal, the tongue when protruded deviated slightly to the *right*, but he had more difficulty in putting the tip against the left cheek than the right. There was complete loss of power in the left upper and lower limbs, and the joints in the left lower limb were rather rigid. Sensation over the whole of the left half of the body and face and the left limbs was diminished to tactile and painful stimuli. The deep reflexes were about equal on the two sides, while the superficial abdominal reflexes were diminished on the left side, and the left plantar reflex gave extension of the big toe when the sole of the foot was stimulated on the outer side, and flexion on the inner side. There was reduplication of the first cardiac sound at the apex of the heart; the blood pressure was 200 to 215 mm. of Hg; urine 1016, no albumen. There was no optic neuritis.

In sixteen days from the time of onset he began to recover movement in the left upper limb, but there was no return in the leg till after another five days. In about twenty-eight days after onset he had recovered all movements of the upper limb, including those of the hand and elbow, and he could advance and abduct the shoulder, but he had no power to elevate the left shoulder girdle. In voluntary coughing the left latissimus dorsi contracted much less than did its fellow on the right, though in adduction of the humerus the left latissimus dorsi acted almost normally.

When put into the sitting position in bed the patient fell over to the left side, and when he had fallen to that side he was unable to raise himself to the vertical position again; but if he was inclined to the right, so that his centre of gravity fell to the right of the spine, he could keep himself in that position. On testing the recti abdominis when lying on his back, by making the patient flex the head and neck, the muscles contracted with equal strength, but the right rectus began to contract before the left; also, on testing the erectores spinae in extending the spine with the patient lying on his face, both muscles contracted equally, but the right moved first. When lying down lateral abduction of the trunk against resistance was noted to be stronger towards the right than to the left.

In another week he had recovered almost normal power in the left limbs with the exception of elevation of the left shoulder; also in forced inspiration elevation of the left shoulder was less than on the right.

On further testing the movements of the head and neck, it was found that in lateral adduction of the neck to one shoulder the trapezius (clavicular fibres), splenius capitis, levator anguli scapulae, and sterno-mastoid of that side took part, but the movement to the right shoulder was stronger than that to the left. In rotation of the head and neck to one side, the rotation to the right, in which the left sterno-mastoid and trapezius act with the right splenius capitis and levator anguli scapulae, was stronger than rotation to the left. Therefore the left sterno-mastoid and trapezius take part in the paretic left-sided movement of adduction of the head and neck to the left shoulder, and the same left-sided muscles take part in the strong, normal right-sided movement of rotating the head and neck to the right side.

About two months after the onset he could sit up without falling to the left, and the strength of the lateral movements of the trunk on the two sides was measured. The patient was seated on a stool and the thighs were fixed by an assistant so as to have a horizontal base line. A jack-towel was passed over the patient's left or right shoulder, and was connected to a traction dynamometer, which was fastened to a fixed point. Starting from the vertical position, lateral traction to the left by the patient gave 13 kilograms and to the right 18 kilograms, and in a second trial 18 and 22 kilograms respectively.

The patient was then inclined to the left with his trunk at an angle of 45° to his base line, and he made traction on the dynamometer towards the vertical line with a force of 13 kilograms, while from the right inclination towards the vertical line the force was 22 kilograms; on a second trial the figures were 12 and 20 kilograms respectively.

The difference between the two sides (4 kilograms) in the first set of observations was not great, but the measurement was made two months after the onset, when the patient had considerably recovered. In the second set the difference was much more (8 to 9 kilograms), and to avoid the error of the difference being due to a left-sided movement, a healthy man was tested, and it was found that the movements on the two sides gave the same strength.

With regard to the pathology of the case, the lesion was probably a syphilitic arteritis, causing thrombosis of the branches from the anterior choroid artery to the posterior limb of the right internal capsule, so that the lower limb was affected more than the upper limb, which recovered first, and the trunk muscles were unusually severely affected; there was also some slight left hemianaesthesia. The movements of the face were unaffected, and this would be due to the fibres near the genu of the internal capsule, which on electric stimulation give movements of the face, being supplied by the posterior communicating artery, which in this case was apparently not involved.

The severe paralysis of some of the left-sided movements of the trunk, the loss of elevation of the shoulder, the slight affection of the hand movements, and the more complete paralysis of the leg as compared with the arm, are exactly the symptoms given by Horsley and Schäfer[3] after removal of the right marginal gyrus; and it would seem that the fibres of the internal capsule, which come from the marginal gyrus, must have been especially involved.

The patient was treated with potassium iodide.

The patient recovered all the movements of the limbs and trunk, with the exception of the elevation of the left shoulder, which was still deficient three months after the onset.

In considering this case it is desirable first to ascertain the muscles which take part in the defective movements and are responsible for their proper performance.

The patient fell over to the left side when he was put into the sitting posture in bed. Also when he had fallen over to the left side he was unable to raise himself from this position on his left side to the vertical mid-line.

A patient in the sitting position falls to the left, because the muscles which should counteract the action of gravity are paralysed, for in every unopposed movement in the direction of gravity it is the antagonists which act, and not the muscles which are the prime movers.

In the supine position, when the lateral movements are not influenced by gravity, the prime movers in the movement of the spine from the mid-line to the left are the left erector spinae and rectus abdominis, and the antagonists to this movement are the right erector spinae and rectus abdominis. Therefore when the trunk is in the vertical position, to prevent the spine falling from the mid-line to the left, owing to the action of gravity, the right trunk muscles (by which is meant the erector spinae, the rectus abdominis, and perhaps the oblique externus and internus) should contract, and their inability to do so shows that they are paralysed. In the same way, when the patient has fallen over to the left side, the muscles which should raise the trunk from that position to the vertical mid-line—that is, adduct from the left to the mid-line—are the *right* erector spinae and rectus abdominis, but in this case the patient was unable to perform this movement, owing to paralysis of these muscles for this particular movement. From the above it is seen

that the same muscles—that is, the right trunk muscles—take part in the unopposed movement in the direction of gravity, of abduction from the mid-line to the left, and also in the opposite movement against gravity of adduction from the left to the mid-line. The difference in the action of the muscles is that in the first case the muscles contract and gradually elongate to let the trunk fall to the left, and in the second case the muscles are elongated to start with and in contracting they gradually shorten and draw up the trunk to the vertical position. The simplest example of these two opposite movements is that of the elbow-joint. If the humerus be placed horizontally and the forearm be put vertically upwards at a right angle to the humerus, and if then the person be told to extend the elbow slowly, the triceps starts the movement, but as soon as the vertical position is passed and the forearm is acted on by gravity the triceps ceases acting, and the biceps and other flexors contract to prevent the forearm falling rapidly, and the muscles elongate gradually to their full extent. If then the elbow be flexed against gravity the same muscles, biceps and other flexors of the elbow, will contract and carry the forearm to the vertical position.

It is a question whether these two opposite movements are represented in the same part of the "motor" cortex, or whether the extensor movement is represented in the cortical extensor area of the elbow and the flexor movement in the flexor area; but as in the extensor movement in the direction of gravity the first action of the muscles is that of flexion to neutralize gravity, it seems that though the idea in the person's mind is that he is performing an extension movement, the movement is really being produced by gravity, and the rôle of the "motor" cortex is to cause just so much contraction of the flexors as will prevent gravity acting too quickly. To test this question in the arm it would be necessary to have a case of hemiplegia in which there was recovery of the movement of flexion, and paralysis of the movement of extension of the elbow, and then observe whether the movement of extending the arm in the direction of gravity could be performed slowly. In the case of left hemiplegia here described the inability of the *right* trunk muscles to prevent the trunk falling to the left under the influence of gravity was in marked contrast to the power with which the *left* trunk muscles could bend the trunk against resistance in the same direction. In fact, the weakness in the former movement corresponded to that in the movement of adduction from the left to the mid-line. In other words, when in the early stages the patient fell over to his left side and had not the strength to lift himself up again, he could carry the trunk from the mid-line to the left against resistance with very fair force, although normally the ratio of power of adduction from the left to the mid-line is to that of abduction from the mid-line to the left as 3 to 2, owing to the muscle being elongated and working at a greater advantage in the first case. This would make it probable that unopposed abduction of the trunk towards gravity to the left and adduction from the left to the mid-line against gravity were represented in the same part of the "motor" cortex.

The next question is, Are these movements of letting the trunk incline to the left and of drawing it from the left to the vertical position, which are accomplished by the right trunk muscles, right-sided or left-sided movements? It seems to me that they must be looked upon as left-sided movements, as they take place in the field of movement situated to the left of the middle line of the body, just as unopposed lateral inclination of the spine to the right and drawing of the spine from the right to the mid-line, that is, adduction from the right to the mid-line, must be looked upon as right-sided movements though they are performed by the left trunk muscles, which in this movement acted normally.

The fact that the loss of these two movements in the left field of action occurred in a case of left hemiplegia is strongly in favour of these movements being left-sided, and consequently of their being liable to be paralysed in a lesion of the right hemisphere.

The other movement which was deficient was that of abducting against resistance the spine from the middle line to the left, which was found to be weaker than the movement of abduction to the right. This movement from the mid-line to the left is performed by the left trunk muscles, especially the left rectus abdominis and erector spinae, while the corresponding normal movement on the right side is performed by the right trunk muscles.

We have, therefore, in this case of left hemiplegia the *right* trunk muscles (1) acting weakly, or not at all, in the unopposed *left-sided* movement of preventing the trunk falling from the mid-line to the left, and in the *left-sided* movement of abducting the spine against resistance from the left to the mid-line, and (2) acting strongly and normally in the *right-sided* movement of abducting the spine from the mid-line to the right against resistance. Conversely we have the *left-sided* trunk muscles (1) acting strongly and normally in the *right*-sided movements of preventing the trunk falling from the mid-line to the right, and in adducting the spine from the right to the mid-line, and (2) acting weakly in the *left*-sided movement of abducting the spine from the mid-line to the left against resistance.

If it should seem anomalous that the right trunk muscles should be paralysed in a left hemiplegia, depending on a lesion of the right hemisphere, for left side movements and not for right, it must be remembered that we have examples in other muscles of a similar condition.

The right sterno-mastoid takes part in the right-sided movement of adduction of the head to the right shoulder as well as in the left-sided movement of rotating the head with the face to the left, and it was found in this case that there was weakness of the left-sided movement of rotation with preservation of the right-sided movement of adduction.

The above apparent anomalies disappear if in dealing with hemiplegia we always remember Hughlings Jackson's dictum, that the brain knows nothing about muscles but only of movements, and all that we have to take into account is, whether the movement takes place in the field of action on the right or the left of the antero-posterior mid-line of the body.

It might be thought that if a person in the sitting position starts from the extreme left lateral position and moves the trunk to the vertical position and thence to the extreme right lateral position against resistance, which might be applied by the hand of the observer acting against the right shoulder, he would perform one movement, as the same muscles—that is, the right trunk muscles—are acting throughout the movement. But from what was found in this case of left hemiplegia this movement cannot be looked upon as one movement. In this case the patient was quite unable to perform the first part of the movement from the extreme left to the mid-line, but he could perform the second part from the mid-line to the extreme right. We must therefore consider the first part as a paralysed left-sided movement and the second half as a normal right-sided movement. If this be correct, then the movement from the extreme left to the mid-line—adduction from the left—must be represented in the right "motor" cortex, and that from the mid-line to the extreme right—abduction to the right—must be represented in the left "motor" cortex.

Therefore if this movement be made continuously from left to right, there must be a change of the representation of the movement from the "motor" cortex of the right hemisphere to that of the left, when the mid-line is passed.

If this be so when the mid-line of the body corresponds to the vertical line, what would happen if the mid-line were inclined 30 degrees to the left of the vertical plumb-line? Will the presumed change of hemisphere take place when the spine reaches the mid-line (in a line with the sacrum) or when it reaches the vertical line—that is, will the whole of the movement from the extreme left to the vertical line be represented in the right hemisphere, or will the part of the movement between the mid-line and the vertical line be represented in the left hemisphere?

The following procedure will put the matter more clearly: A normal person sits on a plane inclined 30 degrees to the horizon, so that the right ischial tuberosity is an inch or two higher than the left, and the pelvis is consequently tilted to the left, and the mid-line of the sacrum and the spine is inclined 30 degrees to 45 degrees to the vertical line. The trunk is then placed in a position inclined laterally as far as possible to the left, and the person raises the trunk against gravity to the vertical position without altering the tilt of the pelvis. The right trunk muscles will then be felt to contract

throughout the movement, and we have to determine whether it is a right or a left sided movement. The movement from the beginning to the point where the spine is in a straight line with the sacrum—that is, the mid-line—must be considered to be a left-sided movement, and to emanate from the right cortex, while from the mid-line to the vertical line the movement must be considered right-sided, and to emanate from the left cortex.

We have, therefore, the same muscles producing an apparently similar movement throughout, but when this movement crosses the mid-line there must be a change of impulses from one hemisphere to the other, and the question arises—how is this change accomplished?

The advantage in the above procedure of tilting the pelvis and putting the mid-line of the trunk at an angle to the vertical line is that in the whole movement to be performed the weight to be raised remains constant—namely, lifting up the weight of the trunk against gravity; whereas, if the pelvis were on a horizontal plane, the first part of the movement, even if made against resistance, would be against gravity, and the second part in the direction of gravity, and this change would give an indication when the mid-line was passed. When the pelvis is tilted no such indication is present, and if the person closes the eyes, the only information which is sent to the cerebrum is that of the afferent impressions from the joints and muscles, and from the semicircular canals.

In every voluntary movement the mechanism is sensori-motor, and it is presumed that the cerebral hemispheres are kept informed by the afferent impressions concerning the relation of the spine to the fixed point of the sacrum and pelvis, and it would thus be determined, according as the movements required are left-sided or right-sided, whether the impulses should come from the right or the left hemisphere—for example, a movement required to carry the spine from the mid-line to the right would be, so to say, registered as a right-sided movement to be put into action by the left "motor" cortex. If this be correct, it would be another instance of how completely muscular movements are under the control and domination of afferent impressions from the muscles and joints, as is seen in locomotor ataxy, and in the important experiments of Sherrington and Mott,[1] who produced complete paralysis of the upper limb in a monkey by dividing all the posterior roots coming from it.

In the case of left hemiplegia here described it is important to note that the paralysis of the movements of the trunk was confined to those which were unilateral—that is, adduction and abduction of the spine—and it was found that in the movements of flexion and extension of the spine no difference in the strength of the rectus abdominis or of the erector spinae of the two sides could be made out; the only difference seen was that the muscles of the right side started the movement sooner than those of the left.

What light does experimental physiology and clinical observation throw on this subject?

From experimental physiology we have the movements which have been obtained in monkeys and in the anthropoid apes from electrical stimulation of the cortex and of the internal capsule. According to Sir Victor Horsley and the writer,[2] from stimulation of the internal capsule in the monkey no movement was ever seen in both recti or obliqui abdominis, but invariably movement restricted to the muscles of the opposite side, notably the rectus, was seen. From the result of excitation or ablation of the "trunk areas" in the marginal gyrus, Horsley and Schäfer[3] considered that the same unilateral representation existed. Also in Grünbaum and Sherrington's[4] experiments on the anthropoid apes the same unilateral result was obtained.

The movements of flexion or extension of the spine have not been obtained from electrical stimulation of one hemisphere. According to the experiments of Mott and Schäfer,[5] who stimulated simultaneously the identical motor centres in both hemispheres for the movement of rotation of the head and eyes to the opposite side and upwards or downwards, upward and downward movement of the eyes could be obtained, and also presumably of the head, though no mention is made of the movements of the head from this bilateral stimulation. What holds good with regard to flexion and extension of the head, would probably apply to the movements of flexion and extension of the spine, and this would postulate that impulses would have to emanate from the centres of both hemispheres to produce a bilateral movement. This might also explain why, in the case of left hemiplegia here described, the contraction of the left rectus abdominis and of the left erector spinae occurred later than on the right side in the movements of flexion and extension of the spine. If these bilateral movements are represented in those cortical centres of both hemispheres which preside over the unilateral abductor movements of the spine, it is necessary to assume that the impulses subserving bilateral movements take a different course in the internal capsule to that followed by impulses subserving unilateral movements; otherwise a lesion of one internal capsule, say the right, would block not only the latter but the former set of impulses, with the result that impulses subserving bilateral movements from the left hemisphere only would succeed in passing, and a bilateral movement would be converted into a right unilateral movement. In the present case, although the unilateral abduction to the left was weaker than to the right, in flexion and extension of the spine there was no difference in strength of the two recti and erectores, but only a delay in time of the left-sided muscles.

On the other hand, there seems no doubt that some bilateral movements are represented in each hemisphere, so that they are produced by stimulation of the centre in each hemisphere alone. An example of this class of movement is bilateral action of the vocal cords which are put into action by stimulation of the cortex of either side.

In favour of both the recti abdominis muscles being represented in each hemisphere so that the movement of flexion of the spine could be brought about through impulses emanating from one hemisphere is the observation made by Dr. S. A. K. Wilson on a case under the care of Sir W. Gowers at the National Hospital, in which both recti abdominis were seen to be convulsed in fits, which were otherwise unilateral. This might be accounted for either by both recti abdominis being represented in each hemisphere, or by the connexion through the corpus callosum between the "centre" for each rectus in each hemisphere being so intimate, that a fit starting in the "centre" of one hemisphere would easily pass to that of the opposite side.

Against the recti abdominis muscles being both represented in one hemisphere is the fact that only the muscle of the opposite side has been caused to contract by electric stimulation of one hemisphere.

The evidence as far as it goes seems to be in favour of both hemispheres being required to produce the action of both muscles, but at present it is not certain.

Taking the movement of the vocal cords at one end of the scale, and of the upward and downward movement of the eyes, or of flexion and extension of the spine at the other end, I would suggest the following explanation why the latter movements may require both hemispheres to produce action of both sets of muscles. The vocal cords have no movement which is independent of each other or is stronger on one side than on the other, the movements are either abduction, adduction, or shortening, and to ensure that they shall never act otherwise than together, the movements of both cords are represented in a centre in each hemisphere, and each hemisphere can act without the other. On the other hand, in upward and downward movement of the eyes there is every gradation through an arc of 90° between vertical upward movement and horizontal movement to one side—say the left—so that in vertical upward movement the centres in both hemispheres would act equally, but as the upward movement takes place more to the left less impulses would come from the left than from the right hemisphere, till finally, when the movements become horizontal the movements would be entirely from the right hemisphere. Also in the spine between flexion in the mid-line and pure abduction to the left against resistance there is every gradation of lateral flexion, and I have found, in performing the movement of flexing the spine against resistance, starting from the mid-position and flexing more and more to the left, that both recti contract, but the right less and less till, when the spine is flexed laterally in a plane which is 45° to the mid-line, the right rectus ceases to contract, and the left erector spinae

begins to act. It is a question, therefore, how much of these lateral movements is represented in both hemispheres; the movement of flexion in a vertical plane of 45° to the left of the middle line, where the right rectus ceases to act, is probably represented only in the right cortex, but it seems probable that the other movements between mid-line flexion and lateral flexion at 45° are represented also in the left cortex in diminishing degrees.

I would therefore suggest that while the bilateral movements of the vocal cords are represented in the motor cortex of each side, and can be made to contract by the impulses from one hemisphere only, the bilateral movements of the head and spine would require impulses from both hemispheres for their performance.

The movements of the tongue appear to be intermediate. For though from the observations of Sir Victor Horsley and the writer[6] on the monkey, no difference between the actions of the two halves of the tongue in the movement of protrusion straight could be detected from stimulating the cortex of one hemisphere, yet the frequency in hemiplegia with which the tongue deviates to the paralysed side, when the patient tries to protrude it straight, is in favour of the movement being represented in each hemisphere, but with the muscles of the opposite side being more strongly represented than those of the same side, and not equally in each hemisphere, as in the case of the vocal cords; and although the tongue has lateral movements, the protrusion to one side has a different localization to that of protrusion straight, and the action of the two halves of the tongue in protrusion to one side—say, the left—consists of advancing of the right half and retraction of the left and is quite different to protrusion of the tongue straight, and is, perhaps, in a different category to the antero-lateral flexion of the spine to the left against resistance, where both recti abdominis have an action similar to that of flexing the spine straight, but with the left muscle acting stronger. Other bilateral movements which might be cited as imperfectly bilaterally represented are those of closing the eyelids and of elevation of the soft palate. In the paper already quoted,[6] we found that in both these movements the closure of the opposite eyelids and elevation of the soft palate on the opposite side could be obtained without the movements of the same side by stimulation of one hemisphere; but as occasionally the movements of both sides were obtained from one hemisphere, we must look upon them as not pure causes of unilateral representation, but that the two sides are unequally represented in each hemisphere. An interesting point is that it is not possible to voluntarily elevate one half of the soft palate, and also that many people cannot close one eye without the other.

In reference to other clinical observations, I would refer to a case of double athetosis now under my care in the National Hospital, in which the movements are much more marked on the left side. On the left side there is frequent clonic contraction of the left trunk muscles, and especially of the left rectus abdominis and the left erector spinae; but there is no movement at all of the right rectus abdominis, and only a much less marked movement of the right erector spinae.

These clinical cases show that contractions of the abdominal muscles, limited to one side, can be produced by cerebral disease, and are thus in harmony with the results of electrical stimulation of the cortex of one hemisphere.

With regard to previous observers, Dr. Hughlings Jackson[7] has expressed the opinion that in cases of hemiplegia—say the left—there is some very slight weakness of the lower part of the erector spinae muscle on the right side, the side of the cerebral lesion.

Of the other points of interest in this case, I might mention the action of the latissimus dorsi as a voluntary muscle and as an expiratory muscle of coughing. I have elsewhere[8] shown that in hemiplegia, as a rule, the latissimus dorsi will act with its fellow of the other side as a muscle of voluntary forced expiration, when it will not act in the unilateral movement of adducting the humerus. In this case, however, the left latissimus did not contract so well on voluntary coughing as the opposite muscle, even when the left latissimus had recovered its power as an adductor of the left humerus. This case, therefore, differed from the majority of hemiplegias in this action of the latissimus dorsi, as well as in the arm recovering before the leg, in the elevation of the shoulder being the last movement to recover, and also in the extensive degree in which the left lateral movements of the trunk were affected.

Another point of interest related to the question whether individual muscles or movements are represented in the "motor" cortex. The condition met with in this case of left hemiplegia, of the trunk muscles of each side acting strongly in right-sided movements, and weakly or hardly at all in left-sided movements, makes it very difficult, if not impossible, to explain how individual muscles could be represented in the cortex—a theory which has been upheld by some observers.

Conclusions.

In this case the patient in sitting up fell over to the left, and when over to the left he was unable to adduct the spine to the vertical position, but when in the vertical position he could push to the right more strongly than to the left. The muscle movements required for the prevention of falling to the left, and for adduction of the spine from the left to the mid-line are considered to be left-sided movements, and to be performed by the *right* trunk muscles; and abduction of the spine from the mid-line to the right against resistance is considered to be a right-sided movement, and also to be performed by the *right* trunk muscles. Therefore the right trunk muscles were paralysed or weak when they acted in left-sided movements, and were normal when they acted as right-sided movements. Conversely the left trunk muscles acted normally in right-sided movements (adduction from right to mid-line) and weakly in left-sided movements (abduction against resistance from mid-line to left). The movements of slow unopposed abduction of the spine from mid-line to left (that is, letting the trunk fall to the left), and of adduction of the spine against gravity from the left to the mid-line are probably localized in the same part of the "motor" cortex.

In making the lateral movement of the spine against resistance from the extreme left through the vertical position to the extreme right, the first half of the movement from the extreme left to mid-line is a left-sided movement, and the second half from mid-line to extreme right is a right-sided movement, and on the mid-line the cortical representation must change from the right to the left hemisphere. It is probable that this change is brought about by the afferent impressions from the joints and muscles of the spinal column.

The movements of the spine which were paralysed or acted weakly were unilateral; two sides taking part in the movements of flexing and extending the spine acted equally strongly though the muscles on the hemiplegic side acted later than on the other side.

From the above observation and that the movements of the trunk obtained by stimulation of the cortex or internal capsule are always unilateral, it seems probable either that the muscles of both sides are represented in the "motor" cortex of each hemisphere, or that the muscles of each side are represented in each opposite hemisphere, and that the association between them through the corpus callosum is very close. In bilateral movements generally the first arrangement is probably that of the representation of the vocal cords, and the second that of the flexors and extensors of the spine, while the bilateral movements of the tongue, of the soft palate, and of closing the eyes are intermediate, and muscles of both sides probably are represented in each hemisphere in varying degrees.

The method of testing and the movements which we should direct the patient to make are most important. In cannot be too strongly emphasized that it is not a question of which particular muscle is weak, but, in the first place, which particular movement is deficient or impossible to perform, and, secondly, which muscles take part in, and are paralysed for, this particular movement.

It has been shown in this case of left hemiplegia that the right rectus abdominis and erector spinae were paralysed when they acted as adductors of the trunk from the left to the mid-line, but they contracted normally when they acted as abductors of the trunk against resistance from the mid-line to the right. It would, therefore, be quite misleading to say that the right trunk muscles were paralysed unless we specified the particular movement, in which they took part, which was deficient.

The movements which we must ask the patient to perform must be unilateral, as the bilateral movements,

from reasons already given, are less liable than the unilateral movements to be paralysed in hemiplegia. The unilateral movements consist in abduction from the mid-line to the right and left, adduction from the right and left to the mid-line, and rotation of the spine with the face turned to the right and then to the left. All these movements should be tested with and without resistance, which should be applied by the hand of the observer against the patient's shoulder, and also both in the position of lying down and in that of sitting up in bed when this is possible, and particular notice should be taken in the latter position whether the patient is unable to prevent himself falling to one side.

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A Clinical Lecture

ON

TRAUMATIC HEART DISEASE

AND

COMPENSATION FOR "ACCIDENTS."

DELIVERED AT GUY'S HOSPITAL.

BY

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EVERY now and then some great discovery in pathology or in therapeutics leads us to change the point of view from which we regard certain diseases, in respect of either diagnosis or of treatment.

Recently there has been a social development, not a scientific discovery, which has led us to consider the causation of many diseases from a somewhat altered standpoint. I am referring to the tendency that there is now for all sorts of people to be insured against the results of accidents. In consequence of this habit, the possibility of an injury being the cause of any disease is much more before us as a profession now than it ever was before. The growing prevalence of insurance against accidents is probably responsible for what was to me a novel experience. Just before Christmas there were lying in adjacent beds under my care in Addison Ward two patients suffering from heart disease, each of whom attributed the symptoms from which he was suffering to an accident. This exceptional occurrence led me to choose as my subject for lecture to-day traumatic heart disease. And in introducing to your notice the question of traumatic heart disease by relating to you some of the particulars about these two patients, I propose to take the opportunity of offering for your consideration a classification of traumatism of the heart generally, then to draw your attention to some of the difficulties by which the profession which you are about to enter is assailed owing to the spread of insurance against accidents, and finally to ask you to consider some possible means of avoiding some of these difficulties.

I.—TRAUMATISM OF THE HEART.

There are three very different conditions in which injuries to the heart occur. First, there are the conditions in which gross and obvious injuries to the heart result from external violence. A man is cycling with his machine out of control; he meets and collides with a cart; the shaft penetrates his thorax and causes immediately fatal results. Other examples are those in which the buffer of a train breaking the sternum and the ribs leads to the heart being seriously injured by the bony fragments. Bullet wounds and stabs of the heart are also in this section—conditions, perhaps, of more interest, because they may afford an opportunity of surgical treatment if the injuries are not too extensive. Another interesting injury to the heart due to external violence is worthy of your consideration, inasmuch as you may yourselves be responsible for causing it in attempts to aspirate the pericardium.

The essential feature of this group of cases is the obvious external violence. The patient seldom survives to present symptoms of heart disease.

The second group consists of cases in which there is a disruptive lesion of the heart, which is certainly not due to any external violence. The patients are found dead, and the muscular wall, generally of the left ventricle, is torn across, and the pericardium is full of blood. In such cases, as a rule, you would find obvious disease of the muscle of the heart, fibroid or fatty, which explains its rupture on such slight provocation. Every now and then it will not be quite clear that there is any obvious antecedent disease, although it seems almost certain that a muscle must be diseased before any internal pressure resulting from the ordinary circulation of the blood would cause it to rupture.

These may prove very interesting cases, because questions may arise as to whether the relatives of a person found dead under such circumstances are or are not entitled to receive compensation on the grounds that he has died as the result of an accident. Certain it is that in some of these cases the patient is found dead in bed, which makes it unlikely that a violent strain is necessary to produce such a rupture. At other times this condition has been found in the case of a man who was exerting himself to his utmost immediately before his death.

I come now to the third group, to which, perhaps, the title "traumatic heart disease" is alone properly given. Introducing you to this group, I will mention the few salient features about 4 cases which have come under my observation.

CASE I.

A young tram conductor, several years before admission, had had rheumatic fever, but believed himself since to have been in perfect health. One night two drunken passengers had to be expelled from his car. He struggled severely in throwing them out, and when he got home a little later, feeling rather exhausted by his efforts, he noticed a curious noise in his chest, and, calling his wife's attention to it, she also was perfectly certain that she could hear a loud noise in his chest which she had never heard before. He came the next morning to the hospital, and was found to have an extraordinarily marked musical murmur, diastolic in rhythm, all over the precordium. He was not suffering from any marked cardiac symptoms beyond that. Here was definite aortic regurgitation, apparently produced or increased by violent struggling; and we imagined that in the struggle he had torn or detached one of the semilunar aortic valves, and was consequently suffering from aortic regurgitation, at present thoroughly compensated.

CASE II.

A painter, 50 years of age, who at the age of 20 had syphilis, and a few years later rheumatic fever, believed himself to be in perfect health from that time until a few weeks before admission. When painting something high up, he slipped, fell, saved himself with a great effort as he fell, and immediately had cardiac pain and breathlessness. When admitted to the hospital, we found that he had aortic stenosis—a well-marked systolic thrill all over the right of his sternum—and distinct evidences of cardiac failure. In his case we imagined that his hypertrophied heart, which resulted from his aortic stenosis, and which had done its work extremely well for many years, was suddenly dilated as a result of the violent effort which he put out.

In both those cases you will see there was pretty clear evidence that the patient had already chronic endocarditis, and that the alleged injury was an injury to a diseased organ.

CASE III.

A sea cook, a little over 20 years old, perfectly well as far as he knew, and telling us that he had never had a day's illness in his life before, was on a voyage from London to Hamburg. Lifting a cauldron of soup off the fire, the ship gave a sudden lurch, and, desperately afraid that the soup might upset and scald him, he put out all his effort to prevent this. He saved it, but immediately suffered from a very severe pain in his heart, and extreme condition of syncope; so that he was laid flat on his back, was kept on his back until the boat reached port, was immediately carried to the hospital at Hamburg, and remained there for many weeks, until it was thought safe for him to travel to England, when he came to the out-patient department at Guy's Hospital.

In his case we assumed, quite wrongly, as I shall show you in a moment, that his tremendously violent effort had ruptured a *healthy* aortic valve; and, under this impression, this case was shown at the Clinical Society. Years afterwards I met this case again in the hospital as an in-patient; and he then told me that, after my careful

inquiries about his previous health—which, you remember, I thought established the fact that he had not had a day's illness in his life before—he went home, and, inquiring from his mother, he was told that he had a bad attack of St. Vitus's dance as a small child, which he had quite forgotten. This case, therefore, is strictly analogous to the other two. I was wrong in assuming that it was an example of the rupture of a healthy valve. There can be little doubt now that this man's valve was affected by his chorea, and that his great exertion ruptured a diseased valve.

CASE IV.

A former pupil of mine was unwisely touring with a heavy motor car in a very hilly district when his car stuck on the middle of a hill. Still more unwisely he took an undue share in pushing the car to the top of the hill. He felt that it was an exertion such as he had never put out before in his life, and wished that his car were lighter. When he got to the top of the hill there was nothing for it but to lie down; and from that day for several weeks he was on his back seriously ill. When I saw him some months later he had recovered, and his heart was perfectly normal; but the history of the case suggests, I think, that he did seriously and acutely dilate a normal ventricle.

So with regard to traumatism of the heart, you will recognize that the difference between the cases in this third group and the cases in the former groups is that these latter patients survive the injury, which is some sort of fierce strain, and have time to suffer from symptoms of actual cardiac disease. Please recognize that there are two forms of injury in this class of case, laceration of a valve and great distension of a cavity, and that there are two classes in which these injuries occur, one with antecedent disease and one without antecedent disease.

One of the difficulties of a clear appreciation of the frequency with which the rupture of a healthy valve occurs is due to the fact that if the patient survives the accident for even a few weeks, when death ensues chronic inflammatory changes will have taken place in the valve even though before the rupture it was perfectly healthy.

Another difficulty in establishing, even by pathological evidence, the existence of traumatic heart disease, is due to this fact: that rupture of a diseased valve—perhaps I had better not say rupture—detachment, or separation of a diseased valve may take place as the result of ulceration apart from any severer strain than is naturally taking place in every heart in which blood is circulating.

II.—PROFESSIONAL DIFFICULTIES IN RELATION TO ACCIDENT INSURANCE.

I now come to the second part of my lecture, and propose to speak to you of some of the professional troubles which are connected with this increasing tendency of the community to insure against the result of accidents. I would have you recognize that this habit is putting upon the profession a totally new class of work—a class of work for which no courses of instruction have been laid down, to which no compulsory lectures are assigned, and which, as far as I know, is not dealt with in any of your too numerous examinations.

Let us look for a moment at what are the existing branches of professional work. First of all, there is our duty to seek out the causes of disease and methods of alleviation and prevention. That is the branch of work which is always being carried on by the medical scientist, whether he be a mere physician striving in his laboratory—which is his ward—or whether he be a special pathologist working under more fortunate circumstances, with proper assistance in his endowed laboratory. The second branch of our work is that of endeavouring to persuade a reluctant public to put into effect the methods of prevention of disease which we have discovered. This falls to the lot of the medical officer of health. The third function of the profession, and hitherto the last, is to cure the patient. This is the duty of the great body of the profession, be they general practitioners or consultants. But now we have a fourth duty, a totally new duty, put upon us. This is, to hold the balance even between conflicting pecuniary interests, the just settlement of which can only be determined by medical knowledge. It is a thing we have not bargained for, and a thing that we are not at present very skilful at performing. It becomes our duty to decide, for example, when a man is insured against the results of accidents and becomes ill, whether it is fair or unfair for him to receive the benefits of his insurance. The difficulty of deciding this, I think, may already have been made clear to you from the cases which I have related of traumatic heart diseases. Let me give you a few other illustrative cases which have recently come under my notice.

CASE V.

A butler, fully insured by his master against the results of accidents occurring in his occupation, is endeavouring to perform his special duty for his master of uncorking for him a special bottle of port. Very anxious not to break the crust—I think that is the right expression—but finding the cork extraordinarily tight, he put out great force, and just as the cork came out he felt a severe pain in his right iliac fossa. Within a day or two he was operated upon for gangrenous appendicitis.

Is that a case in which it is fair for the insurance company to have to pay the insurance money? Is that a case in which it is fair for the employer to be deprived of the advantages of having insured his servant against the results of "accidents"?

CASE VI.

A labourer was digging on a plot of land. It was 5 o'clock on a winter afternoon. His work was over. He walked home, had his tea, and, while sitting down after tea, suddenly had a violent pain in his head, and in twenty-four hours was dead from cerebral haemorrhage.

Was that an accident resulting from the heavy strain of digging in the ground? Is it fair that the insurance company should pay for the death of this man, or is it fair that this man's dependants should be deprived of the advantages of his insurance?

CASE VII.

A factory hand was taking part, as he often did, in moving a piece of iron. He felt a pain in his back, but took no notice of it, and went on moving other pieces of iron. He was not quite so well the next day, but went to work. The following day he had pins and needles in his toes, and in three days was lying in a London hospital with all the symptoms of acute myelitis.

CASE VIII.

A gardener was walking along, pushing a mowing machine in front of him. He suddenly stumbled, and, in trying to save himself, "ricked his back." From that day forth he was a wreck from neurasthenia. He thought he had all sorts of diseases and pains everywhere. There could be no doubt that he had neurasthenia.

Was the neurasthenia the result of the accident? Was it not rather the result of the fact that the law provides that his master shall compensate him for illness produced by accidents?

CASE IX.

A hunting man had influenza. He was recovering from it, and his wife entreated him "not to hunt to-day." He did hunt that day, and when so doing was thrown, soon scrambled up again, went on, and finished the run. Next day he was not so well. The day after he had a rigor, and in three days he was dead of acute pneumonia.

Was his acute pneumonia the result of accident? Was it fair that the insurance company, restricting its policy to the direct results of accidents, should have to pay?

Now, gentlemen, why I ask you carefully to consider this question is because it seems to me to be likely that if this work of deciding these pecuniary interests is carried on as it is carried on at present, it must lead to a degradation of the profession in the eyes of the public.

A lay authority in the insurance world frequently consults me on such subjects as I put before you to-day. He says, "Do you think that such and such a condition was due to the accident?" "No, I certainly do not." "Do you think any medical man of repute can be found to go into the witness-box and say that he thinks it was the result of the accident?" "Yes," I say; and he shrugs his shoulders with an expression which shows what he thinks of the medical profession. But he does not understand the position. He does not know how difficult it is for us; how impossible sometimes to estimate which of the numerous possible causes of any disease is the dominant one in an individual case. He is accustomed to legal decisions which are made upon authority, and not to medical decisions, which are often necessarily indefinite. My friend thinks when he extracts from me the fact that other members of the profession will swear to an opinion different to that which I have expressed, that this is an indication of the fact that the members of the medical profession will accommodate their opinions for the purpose of sale. Of

course there are black sheep in every fold. But the striking differences of opinion that may be held by honourable men are inherent to the nature of the cases. Nevertheless, the fact that it is constantly happening, that one medical man is giving evidence on one side, and another man is giving directly opposed evidence on the other side, is in my opinion having a very deleterious effect upon the high regard in which the profession is held. Not only so; the present method of settling these cases is causing a most unnecessary expense to the community.

REMEDIES.

Now let us consider possible methods of reforming this uncomfortable position for the profession. The first one I should like to urge upon you is this, that we, as members of the profession, should insist that in this matter we will be arbitrators and not advocates. I have the highest possible respect for the legal profession, and am certain that it is in every particular as honourable a profession as that of medicine; but I am convinced of the fact that the unfortunate necessity which compels members of the legal profession to act as advocates, and to defend people against charges which they know to be true does, in the eyes of an undiscerning public, somewhat lower the esteem of the profession generally. We do not want to be advocates. We, as a medical profession, if we are called upon to perform this new function of seeing fair play between different pecuniary interests, should take the position if we can of arbitrators and not advocates.

It should not be impossible to set up a special tribunal to deal with these questions in which independent medical men with special experience should act in a judicial capacity as arbitrators or assessors to a legal arbitrator. Before such a tribunal, medical evidence should be restricted to questions of fact observed by medical men actually in charge of the patient.

But there is another means whereby we might possibly lessen the complexity of the problem to be arbitrated upon in many cases. The problem in most cases now is how far has the traumatic element anything to do with the condition? Cannot we persuade the insurance companies; cannot we persuade the Government; cannot we persuade the people generally, that while they are about it, insuring against the result of accident, they should, instead, insure against invalidity of all sorts? It is not often, though no doubt it is sometimes, a difficult thing for a medical man to say definitely that this man has a disease and that man has not a disease, but it is constantly a very difficult thing to say whether the disease from which any man is suffering, or has died, is due to a specific cause or not. If the hunter, for instance, is insured against death and not against death from accident, it does not require extraordinary skill on the part of a medical man to certify that he is dead—a duty, by the way, which under existing circumstances is imposed upon us by the State without remuneration.

That insurance against invalidity from all causes is much needed in the case of nearly all breadwinners none can doubt. If the medical profession in a desire to deprive itself of unnecessary work helps forward this movement, its action will be entirely in keeping with its best traditions. We are always working hard to add the whole profession to the ranks of the unemployed.

There is another professional difficulty raised by this habit of insurance which is deserving of your carefnl attention. It seems right that we should recognize that as a profession our pecuniary relations are necessarily somewhat different to persons who are insured to those who are not.

In the days before insurance became common any breadwinner who met with a serious accident which incapacitated him was at once in the eyes of the profession probably a suitable subject for charity, and his presence in a hospital passed without question. But when the breadwinner is definitely insured against the results of his accident, or can claim compensation covered by insurance, it becomes a very doubtful question whether the medical profession should give their services without payment in order to save the insurance companies from the responsibility of paying their agreed liabilities.

This is, however, a complicated subject on which I have not time to enter now, except to say that, like the other professional difficulties to which I have already referred, it can only be wisely dealt with after prolonged discussion and careful action.

And now one or two words as to what steps you individually can take in order to meet these difficulties. I want you to appreciate that no amount of the highest possible individual professional uprightness will really enable you to do much in meeting these and many other difficulties which are assailing, or are likely in the near future to assail, the profession.

The recently issued report of the Poor Law Commission indicates the possibility of social changes which may profoundly alter the relations of the profession to the State.

All our professional difficulties become less the more careful we are that each of us shall always be actuated by the highest professional motive, that is to say, that in all our dealings we shall have an absolutely single eye to the advantage of the patient and no regard whatever to our own personal interests. But this will not enable us entirely to meet the collective difficulties of the profession.

It can only be by concerted action of the profession as a whole that such modifications in procedure as I have been suggesting can be carried out. You are doing your little part at present; you are paying fees to universities and to examining bodies to whom you may look in the future, perhaps, for some help in organizing the affairs of the profession. Later on you will pay a fee to the Registrar of the General Medical Council, and you may then look to the General Medical Council, perhaps, to secure such reforms as the future may make necessary. But I think that after some experience you will have to admit that neither the universities, the examining bodies, nor the General Medical Council can do much for you, because even if they had time to spare from their special duties, they have no recognized means of determining what are the wishes of the profession. As soon as you are qualified it becomes your duty to enrol yourself as a member of some of the many societies which are formed amongst medical men in order that they may together discuss concerted action to enable the profession in the most effective way to carry out its high mission and to maintain its worthy reputation.

And here may I suggest that of the various societies that you will have the opportunity of joining, perhaps the British Medical Association is one most deserving of your attention, from the fact that whereas while taking part in the local work—social, scientific, and political—of your own Division, you will, through the central organization, be brought into contact with Divisions all over the British Empire. If you recognize the limitation of your individual effort you will appreciate the great advantage of belonging to a body which is in touch with your professional colleagues all over the world.

You will be told by some, perhaps, that you will find in the Association a narrow spirit of trade-unionism. On the contrary, I believe you will recognize in it, as I have certainly done, the high ideals of a professional guild endeavouring to maintain in each of its members the best professional traditions.

Join the British Medical Association in the same spirit as many of you are now joining the officers' training corps of the Territorial Army, not for what you can get out of it, but for the opportunities it will give you of serving your profession, and, through your profession, the public. Be actuated by the motto of the hospital, "Dare quam accipere."

AN open-air school for tuberculous children has been established on an old ferry boat which was recently turned into a day camp for tuberculous patients by Bellevue Hospital, New York. The school is maintained by the Board of Education, and at present there are thirty-five pupils in attendance, ranging in age from 6 to 15 years. The children are carefully protected from the cold, and work at their desks in all kinds of weather. The school hours are short, as the main object is to make the children well. A record is kept every day of the weight and temperature of the children, and milk and eggs are given to them at odd intervals. The improvement in some of the children has, according to the *New York Medical Journal*, from which the account of the school is taken, been remarkably rapid.

A Clinical Lecture

ON

THE TREATMENT OF A CASE OF EXTENSIVE INFANTILE PARALYSIS BY OPERATION AND APPARATUS.

DELIVERED AT GUY'S HOSPITAL,

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THE prevalent treatment of infantile paralysis is not always satisfactory, for several reasons. It calls for a great deal of care extending over a long time. Deformities develop so insidiously that they may appear to be inevitable, whereas they are mostly preventable. The value and importance of suitable instruments designed to prevent these contractures are not sufficiently recognized, and there is a current idea that instruments of all kinds do not aid but hinder the restoration of function. The advantages of well-planned exercises are little understood, whereas much faith is placed in comparatively useless massage and electricity. The parents expect quick results, get tired of tedious methods and discontinue them. The value of timely operations designed for the restoration of the balance of power around joints and for the firm support and equilibrium of the body is not yet thoroughly appreciated.

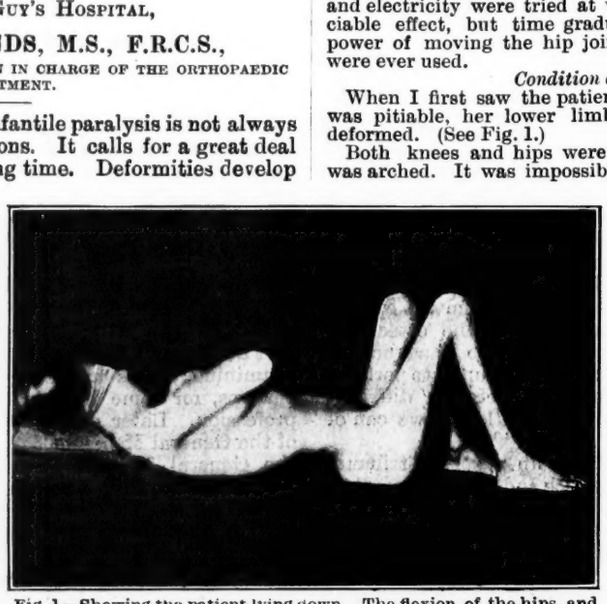

Fig. 1.—Showing the patient lying down. The flexion of the hips and knees and the lordosis of the lumbar spine are shown.

It is, therefore, common to see patients at hospitals and in the street whose condition could have been much improved by rational treatment at an earlier date. Too often surgical aid is not sought until such grave deformities have developed that ideal results are impossible. In a few cases the permanent paralysis is so extensive that all treatment seems to be useless. The following account may help to show that something may be done even for some of these apparently hopeless cases.

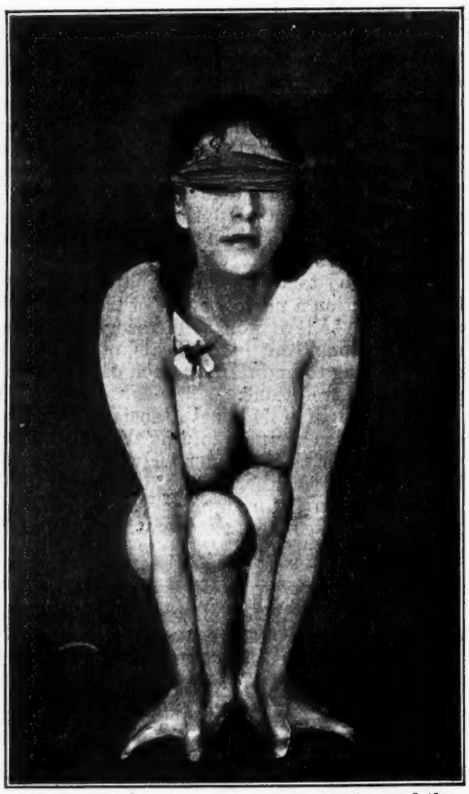

Fig. 2.—Showing the mode of progression and the talipes valgus. Note the length of the arms.

A girl, aged 17, was referred to me at the orthopaedic department, Guy's Hospital, by Dr. Spurgin, who had recently taken an interest in the patient, but had never attended her.

History.

On August 6th, 1894, when the child was only 3 years old, she had a chill, and cried a good deal during the night. In the morning both her legs were found to be completely paralysed. For two or three days she had retention of urine, relieved by a catheter. There were no other children struck with paralysis at the time, either in the house or neighbourhood. Rubbing and electricity were tried at various times without any appreciable effect, but time gradually brought a little return of power of moving the hip joints. No instruments or splints were ever used.

Condition on Admission.

When I first saw the patient, in October, 1908, her condition was pitiable, her lower limbs being paralysed and terribly deformed. (See Fig. 1.)

Both knees and hips were flexed and the lumbar spine was arched. It was impossible to get the legs any straighter than is shown in the figure, without increasing the lordosis of the lumbar spine.

Standing and walking were impossible, but the patient could shuffle along by grasping and moving her feet with her hands (Figs. 2 and 3). Consequently the arms were remarkably well developed. Both lower limbs were greatly withered and abnormally short. Their circulation was poor, the pulse being small, and the feet and legs were mottled blue and cold.

The paralysis appeared to be complete below the waist except for the power of:

1. Very weak extension and abduction of the right hip.
2. Weak flexion and adduction, with very weak abduction and extension of the left hip.
3. The peroneus tertius and the flexors of the toes on the right contracted a little, and the calf muscles on the left were not completely paralysed.

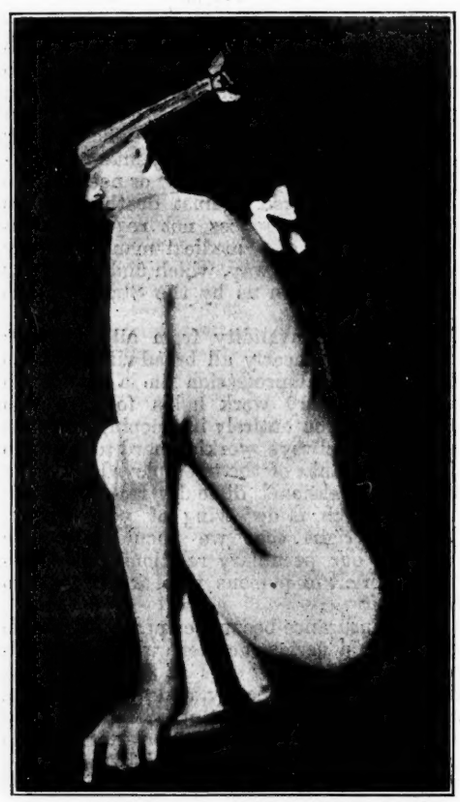

Fig. 3.—Showing the mode of progression and the permanency of the lordosis.

Both ankles were flail, and when the patient crawled about they assumed the valgus position. The hips were not dislocated but were firm. The reflexes were abolished in both legs, but sensation was not impaired. The bladder and rectum acted naturally and menstruation was normal.

Treatment.

—On October 29th, 1908, under general anaesthesia, the following procedures were carried out *on both sides at one sitting* lasting nearly an hour. The right limb being the most contracted was dealt with first. The femoral artery was felt pulsating just below Poupart's ligament, and the left index finger was constantly kept over the anterior crural nerve, ½ in.

external to the artery, as a guide to prevent any injury of the main artery or of the nerve by the tenotome, which was never passed as far in as the finger. A curved, long tenotome was introduced about 1 in. below and outside the anterior superior spine between the skin and the contracted anterior structures, which were gradually divided, while an assistant pressed the knee backwards. Similarly, through the same puncture, the blade was passed backwards towards the buttock, and the shortened fasciae and abductors were severed while the knee was pressed inwards. In spite of vigorous manipulations it was not possible to straighten the hip until the anterior tissues had been divided down to the very neck of the femur. The external finger held outside the large vessels and nerves was of considerable value during this operation. The knife was not removed until the thigh was extended to the full degree, and remained in this position when all pressure was removed from the lower end of the femur. Remarkably little bleeding into the tissues followed the extensive cutting that was necessary.

A tourniquet was applied around the middle of the thigh, which was protected with lint. The shortened tendons behind the right knee were divided subcutaneously, care being taken to avoid injuring the external popliteal nerve. It was not thought necessary to divide any tendons behind the left knee.

The knee-joint was opened through a curved incision passing across the ligamentum patellae, which was divided. Half an inch of the lower end of the femur was sawn off, and a quarter of an inch of the upper end of the tibia, but this did not allow the knee to be straightened. Consequently more bone had to be removed from the femur. The last section was just below the adductor tubercle and the epiphysial line. Thus each limb had to be shortened about 1½ in. before it could be straightened without exerting too much tension upon the contracted popliteal vessels and nerves.

The high section of the femur had the advantage that it left a raw surface only a little larger than that of the tibia. Usually the bones do not fit so well. The experience gained from the right knee was valuable when dealing with the left. The necessary amount of bone was removed without delay upon experimental sections, and thus time was saved.

So much bone had to be removed that it was no use sewing the upper half of the patella to the front of the tibia with the idea of preventing flexion. Therefore the knee-cap and a good deal of pendulous skin was removed and the wound closed.

A sealed dressing was applied to the punctures upon the hips. Antiseptic gauze and wool were bound round the knees, and the tourniquets were removed. Perforated tin splints were incorporated in the dressings to stiffen the knees, and the patient was at once fixed in a double Bryant splint without extension. Very little shock followed the operation, and the wounds healed perfectly, but there was a good deal of pain in the right leg, due to temporary obstruction of its circulation and stretching of the popliteal nerves. The foot became blue and insensitive, and the pulsation of the posterior, tibial, and dorsalis pedis stopped.

These symptoms were relieved by allowing the knee to bend a little for a few days, and by removing a constricting gauze bandage which, having been applied wet, had contracted in drying. The circulation and sensation soon returned, but some of the epidermis peeled off.

Twelve days after the operation the knees were fixed in Bavarian plaster splints, and the double Bryant splint discontinued. The hips were extended daily to prevent contractures.

Three weeks after the operation the patient was able to flex both thighs a little, and she tried to move the hip in all directions.

The apparatus shown in the photograph (Fig. 4) was applied five weeks after the operation, and the patient was instructed and helped to learn diligently the arts of balancing, standing, and walking. Gradually she became more and more proficient, and quite used to her instrument. She was very pleased with the exalted position of her head, and much impressed by the increased range and different point of view.

She went out well satisfied on January 5th, 1909, nine weeks after the operation. The knees were firmly united, and all the movements of the hip were increasing. She could flex both thighs about twenty degrees, so that she could walk on the level with the aid of a little support from crutches. She could stand alone without these, and she will slowly be able to dispense with them for walking. (See Fig. 4.)

Fig. 4.—Showing the patient wearing the apparatus after operation.

DIAGNOSIS.

The rapid onset of the disease during early childhood, the extent of the paralysis and its irregular and capricious distribution, are characteristic of acute anterior poliomyelitis, but the persistence of such complete paralysis and the temporary loss of power of the bladder are unusual features.

That the lesion is one affecting the *lower neuron* is clear from the extreme wasting and want of growth of the legs, the reaction of degeneration and the abolition of the reflexes.

The extent of the paralysis points strongly to the lumbar cord as the site of the disease, and the absence of anaesthesia shows that it did not extend into the posterior columns. Therefore, transverse myelitis and other affections of the lumbar enlargement of the cord are excluded. Peripheral neuritis does not lead to such a lasting paralysis, nor does it select the motor and leave the sensory fibres unaffected. No primary disease of muscle develops so suddenly, nor do any of them have the same distribution as in this case. Therefore the diagnosis was easy, and nearly all the interest of the case is centred in the treatment. But please remember that rational treatment depends on accurate diagnosis; and that in these cases the diagnosis is not completed until you can tell which muscles are affected, or, as in such an extensive case as this, which muscles or movements have not been completely paralysed or abolished. About the hips it is not easy to tell which muscles are damaged, but lower down it is fairly easy.

In any case, movements are more important than muscles. You may remember that my patient had practically no muscular power below the hips, and that only the feeblest movements of those joints were possible. These facts were of great value in deciding upon the treatment. When the natural relations and the normal range of movements of a joint are restored, any weak muscles acting upon the joint are capable of increasing growth and power.

It was of supreme importance to ascertain that the heads of femora were firmly articulated in the acetabula, for if the hip-joints had been dislocated or unstable, the value of the ilio-femoral ligament would have been reduced to a minimum, so that balancing and standing would have been difficult or impossible without lessening the mobility of the hip-joints.

TREATMENT.

With deformities, as with other evils, prevention is better than cure. Much can be done to prevent contractures even in extreme cases of infantile paralysis. It is very desirable to do this whenever possible, because the deformities are not only bad in themselves, but they also

interfere with the nutrition and development of any muscles that may have escaped complete paralysis. The stretching of weak muscles and the contracture of their stronger antagonists lead to progressive wasting of both, because a free range of movement is essential to the healthy circulation and growth of all muscles.

It is obvious that the actions of muscles must be imperfect when the joints and bones upon which they act have lost their natural mobility and shape.

It is of vital importance, therefore, to prevent contractures, and incidentally to avoid the need of operations whenever possible. A good deal can be done by:

1. Regular and vigorous stretching of the muscles, which tend to retract.
2. Developing their antagonists as far as possible by active and passive movements, massage, and electrical stimulation.
3. And lastly, by the use of suitable instruments, especially at night.

For instance, in this patient, contractures of the knees and hips could have been minimized by passive extension of these joints several times daily, by encouraging voluntary contraction of the extensors, and especially by the use of a double Thomas's hip splint at night. Then an apparatus, such as she now wears, could have been used in the day, without any need for a preliminary operation. In these ways the mobility of the knees and the normal stature could have been preserved.

It is interesting that the patient herself unconsciously prevented the development of talipes equinus by putting her weight upon her feet during her endeavours at progression.

OPERATION.

After carefully examining this patient and realizing the extreme severity of the contractures and the extent of the paralysis, I was inclined to advise against operation. But the patient, who had come all the way from Newcastle, was very anxious to have something done even at a considerable risk. Above all, her plucky endeavours to move about induced me to change my mind. The girl was so keen to help herself, that it seemed worth while to give her a sporting chance of learning to stand and walk with the aid of instruments. I did not dare hope that the result would be so good as it has already become in the short time that has elapsed since the operation. I have been greatly surprised to watch the development of so much power of moving the hip-joints. The most I expected was progression by rotary pelvic movements, but there is now no need of this ugly method, for the patient can flex the hips sufficiently to enable her to walk. These are some of the points which make me consider this patient a good subject for my clinical lecture.

Division of Contracted Tendons and Fasciae.

It was evident that these procedures would be insufficient to overcome the extreme contractures which had taken years to mature in this patient.

The vessels and nerves were also so greatly shortened that the simultaneous straightening of the hip and knee would throw an excessive strain upon these vital structures, which were unusually small in these withered limbs. The hips could have been first extended, and then the knee straightened after an interval of some weeks, during which the vessels and other structures behind the knees could be gradually stretched.

In this way slighter contractures of the knee and hip can be corrected without excising the knees and shortening the stature; but in my patient this method did not appear hopeful, on account of the degree and rigidity of the contractures and the withered condition of the limbs. Moreover, the bony and articular changes at the knees from long malposition and the total absence of muscular power made it certain that the knees could not be brought quite straight. In any case they would be flail.

The initial cost and ultimate expense of an instrument under these circumstances would be much greater, which is an important point for poor people.

Arthrodesis was unsuitable because the knees could not be extended without free removal of bone, and the union is not so likely to be firm as after excision. I therefore decided to undertake a more radical operation which could be completed at one sitting. I have generally dissected away the shortened fasciae for severe contractures of the hip to lessen the risk of recurrence, but in this patient, in order to save time, I was content with subcutaneous but very free division. Recurrence of the contracture can be prevented by passive movements and instruments. When the hip was fully extended the tension of the hamstring was somewhat relieved, so that the flexion of the knee was diminished to some extent. Tenotomies, however, made but little difference, and a very free excision of bone was necessary.

Instruments.

The day instrument and a posterior night splint prevent bending of the knee at the union and at the epiphysial lines.

The apparatus shown in the photograph (Fig. 4) is provided with toe-lifting springs and T valgus straps. There are no joints at the knees, which are kept firmly fixed by straps. The side-irons take some of the weight off the legs, and the whole apparatus, including the pelvic girdle, adds to the stability of the body.

For making the instruments I am much indebted to Mr. Pengelley, of Catherine Street, Strand. My best thanks are also due to Mr. Perkins, my late House-Surgeon, and to my dressers, for their help during the operation and after-treatment.

THE NERVE SHEATH IN THE CAUSATION AND TREATMENT OF NEURALGIA.

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THE influence of pressure as the cause of neuralgia, especially in the case of the branches of the brachial and sciatic nerves, is so abundantly recognized, that it seems unnecessary to labour or illustrate the point. It is not, however, sufficiently recognized that this pressure upon the sensory elements of the nerves may arise, not only from causes entirely outside the nerve bundles, but also from changes in the perineurium, that is, the nerve sheath.

These changes may be due, firstly, to an extension of inflammation from surrounding tissues, as in the cases of brachial neuralgia, in which one can frequently, in my experience generally, elicit a history of bruising of the muscles or fibrous tissues surrounding the nerves; secondly, to such toxic conditions of the blood as have a tendency to cause proliferation of the connective tissue in the immediate neighbourhood of blood vessels, for example, chronic alcoholism; and thirdly, to acute congestions of blood vessels in the sheath of the nerves. This form of neuralgia is apt to occur in influenza, or as an after effect.

Morphologically, there is, I am told, no such thing as a nerve sheath—that is, no separate structure which can be clearly defined and exhibited; but, while this is no doubt true, and nerve elements cannot be found lying loose in a nerve sheath as a nut in its shell, it is true enough for all practical purposes that there is a distinct nerve sheath. The connective tissue which forms a nerve sheath is continuous externally with the connective tissue outside it, and from its inner surface fine trabeculae of connective tissue extend to form a protective covering between and round the myelin and axis cylinders of the nerve elements. Blood vessels are carried in all these connective tissue structures, and it is, I believe, upon the congestion of these vessels that the occurrence of pain depends. There is no lymph space between the sheath and the nerve elements proper, and for this reason any material overfullness of the vessels of the sheath, or a very slight oedema around them, or exudation into the lymph spaces in the interstices of the sheath will of necessity cause an amount of pain altogether out of proportion to the pain which would be caused by an equal or vastly greater effusion outside and round the nerve sheath itself.

If this theory of the cause of pain is correct, the failure of many methods of treatment in some cases of sciatica and brachial neuralgia will be explained and the reason for the success of other methods rendered probable.

To some of these methods I will revert later, but will now give details of two cases that seem to illustrate the truth of the proposition that it is often the condition of

things inside and not outside the nerve sheath that is the cause of pain.

CASE I.

J. W. O., a miner, aged 32, was admitted to the General Hospital in Birmingham under my care on February 29th, 1908, complaining of sciatica.

In March, 1907, he had a good deal of pain in the left buttock; this gradually got worse and extended down the leg. It soon became so severe that he had to give up work, and, failing relief from medicinal treatment, he went to Droitwich to try brine baths. He improved somewhat, but soon got as bad as ever, and in February when he was admitted to hospital was unable to walk on account of the pain. I am sorry to say I wasted a month of his life in trying to relieve him with drugs and local applications.

As he was unrelieved I asked my colleague, Mr. Barling, to cut down upon the sciatic and open the nerve sheath. This was done on April 1st, and numerous tough red adhesions between the sheath and the nerve were found. These were broken down and the nerve stretched *inside* the sheath.

Next day he was fairly comfortable, except for some pain due to the incision.

Three days after the operation it was noted that all pain had gone, and that the patient had not enjoyed so long a freedom from pain for months.

Ten days later he was discharged, free from pain, and able to walk with perfect comfort. He has remained quite well since.

CASE II.

A gentleman, aged 65, recovered very slowly from a severe attack of influenza.

During his convalescence I was asked to see him again on account of intolerable pain down the arm, and especially in the distribution of the musculo-spiral nerve. This pain was most marked about the middle of the upper arm, where the nerve is most superficial, and was associated with exquisite tenderness. No drug treatment made the slightest difference to him, except large doses of antifebrin, which gave him moderate, if transitory, relief. Radiant heat gave more freedom from pain than anything else. Leeches, blisters, and all sorts of local applications were tried, but ineffectually.

Very slowly and gradually the pain lessened, but never entirely left him, until one day it suddenly became worse than ever, and the temperature, which had been normal, began to vary from 99° to 100.5°. I told him that there was probably inflammation inside the nerve sheath, and urged operation, thinking that there might be adhesions also between the nerve and the periosteum.

He would not entertain the idea, but after a week of misery consented to anything being done.

Mr. Barling cut down on the musculo-spiral nerve at the point of maximum pain, and found it adherent to the periosteum. The adhesions were broken down and the nerve sheath opened.

The same treatment as in the case of sciatica was adopted. Immediate relief from pain followed, and tenderness gradually disappeared.

It seemed certain that no other treatment would have been so immediately useful in either of these two cases; indeed, no other treatment had done more than give temporary relief.

Nerve stretching, from which so much was expected in the treatment of severe long-standing cases of neuralgia, has been abandoned on account of the disappointing results; and, indeed, it is not easy to imagine how any amount of pulling a nerve could influence the inflammatory condition of the inside of the sheath.

It is in the hope that this method of treatment may be criticized that this paper is being published. Of the success of the procedure there can, I think, be no doubt, so far as the relief of pain is concerned. I would only urge that it should be adopted before trophic changes occur, as Dr. Fleming, of Edinburgh, and others have pointed out that, even if a nerve is healthy to begin with, continued pressure will ultimately end in disorganization of the axis cylinder and the production of trophic troubles.

In the *Practitioner* of 1886 the late Sir Joseph Fayrer published a case in which what was believed to be a swelling of the nerve sheath was opened and about a couple of drachms of clear fluid evacuated, with immediate relief to the severe sciatic pain which had been complained of. I have had an equally good result in a case of severe neuralgia of the ulnar nerve in which a similar course was adopted.

Many instances of the cure of sciatica by acupuncture have been recorded, due doubtless to the setting free of fluid accumulated between the nerve sheath and the myelin of the nerve; but though this method may be, and often is, successful, it cannot compare, any more than can the procedure adopted by Sir Joseph Fayrer, with the more thorough operation of cutting down on and opening the nerve sheath and the separation of internal adhesions.

AURAL VERTIGO.*

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SINCE Ménière's description in 1861 of a case of the disease with which his name has been since associated, this title has been extended to include a variety of cases bearing more or less resemblance clinically to that properly called Ménière's disease. Yet, viewed from the pathological standpoint, the great majority of these have no right to be thus included, and, on the other hand, there are other cases in which similar changes have taken place in the ear, and which, nevertheless, have been considered quite distinct and unassociated with aural disease. Some authors have attempted a compromise by limiting the name to the rare variety first described and grouping the others under the title "vertigo with aural lesions and Ménière's symptoms," obviously a makeshift, but probably as good as was possible owing to the limited knowledge of the actual pathological changes in the ear, and especially in the labyrinth.

DEFINITION.

The result of the researches of many observers, both in this and other countries, during the past few years on the changes in the middle and internal ears consequent on disease, suggests the advisability of a thorough overhauling of our terminology. Indeed, the application of the name of any man, however distinguished, to a disease cannot be regarded as scientific, and is, in fact, likely to hamper the study of its details. There is no doubt that this has been the case with reference to the subject of this communication. In aural disease, as in disease of other parts, the only scientific nomenclature is that based on pathological findings, and in this way only can cases be relegated to their proper category. So that, as Lermoyez remarks, the time has come when the name "Ménière's disease" should be abandoned and our nosology revised in the light of the conditions found *post mortem*. For the present, however, we may retain the title to denote the condition actually described by the original observer.

As a matter of fact this is a very rare disease, an observation which, I have no doubt, will occasion surprise in view of the frequency with which the name is used. The case described by Ménière before the French Academy of Medicine was that of a young woman who during her menstrual period was suddenly and without evident cause affected with deafness, accompanied by vomiting and severe vertigo. Five days later she died, and on *post-mortem* examination the only lesion found was haemorrhage into the semicircular canals, and to a less extent into the vestibule, while the cochlea was not affected. (It may be remarked here that a fatal issue to Ménière's disease is unusual.) Cases presenting the same clinical symptoms had previously been reported, but they were considered to be due to hepatic, stomachic, renal, cerebral, cerebellar, or other cause, and their connexion with an aural lesion was not suspected. From this case Ménière concluded that these previously reported cases, and others resembling them in showing the symptoms of sudden deafness, loud subjective noises, severe vertigo—the three cardinal symptoms as they have been called—taken in connexion with the well-known results of experiments on animals, were due to haemorrhage or acute inflammatory exudation into the semicircular canals. Unfortunately, as I have said, the generic term "Ménière's disease" has been used to include all cases in which these symptoms have presented themselves, in whatever degree and in whatever manner of appearance. Hence the confusion of thought which has arisen. We may, however, use the parent disease as a guide to describe the various aural conditions which give rise to vertigo.

ANATOMY AND PHYSIOLOGY.

Let me rehearse in little detail the anatomy and physiology of the internal ear, for it will aid us in understanding the phenomenon under consideration. It must be looked upon as a double organ, dealing both, and to a certain extent separately, with the sense of hearing and with the sense of position in space—the static or, better, the spatial sense.

* Read before the Border Counties Branch of the British Medical Association.

The terminal organs of these two senses are delicate membranous structures, comprising together the membranous labyrinth enclosed in firm bony chambers, the osseous labyrinth. Though anatomically connected, the functions of these two main parts of the membranous labyrinth are distinct, and, though the nerves which supply them enter the internal ear together as the auditory nerve, they have distinct and separate central connexions and courses. The cochlea is the organ of hearing, and has its own nerve, the cochlear nerve, while the vestibular nerve, the nerve of the spatial sense, passes to the semicircular canals and the vestibule. The osseous labyrinth has two openings in the wall contiguous to the middle ear, the fenestra rotunda and the fenestra ovalis, the former leading to the cochlea, and closed by the membrane of the round window, and the latter leading to the vestibule and closed by membrane and the footplate of the stapes, the inner termination of the chain of ossicles. The fenestra ovalis is, as we shall see, of importance in reference to the question of vertigo. As regards the position of the canals relative to the tympanic cavity, the horizontal or external canal has the closest relationship, lying immediately beneath the inner wall of the aditus, where during the performance of the radical mastoid operation its external service can be seen separated from the fenestra ovalis by the prominent Fallopian canal containing the facial nerve. The superior canal comes to the surface in the upper part of the inner tympanic wall above the fenestra ovalis. The posterior canal is not contiguous in any part to the middle ear. From its position we are prepared to find that the external canal is the one most liable to be affected by the extension of middle-ear disease. Between the osseous labyrinth and the membranous labyrinth is the perilymph, and inside the latter the endolymph. The perilymph is in communication with the arachnoid cavity. The arterial supply comes from the auditory artery, a branch of the basilar, and the veins empty into the lateral and superior petrosal sinuses. There are, however, communications between the blood vessels of the inner and middle ears through the outer wall of the labyrinth or the inner wall of the tympanum.

The physiology of the internal ear is not by any means clear even yet. We are not at present concerned with the auditory part, though that presents unsolved problems, but in connexion with the spatial portions their exact relation to the maintenance of equilibrium of the body and to the appreciation of motion in different planes is still a matter largely of speculation, while their connexion with ocular movements and, it may be, with muscular tone requires further study. Since the classical experiments of Flourens on pigeons there have been many workers in this field—notably Weber, de Cyon, Loewenberg, Delages, Helmholtz, Crum Brown. When, however, we come to details, we find conflicting and contradictory results. Indeed, from the nature of the case this must be so, for, as Hartmann says, it is impossible to determine whether the results are due to stimulation or to depression of the functions of the vestibular nerve. There is, however, practical agreement that the semicircular canals perform an important function in the maintenance of equilibration, and probably we may accept Crum Brown's theory that the canals on either side in their action balance those in similar planes on the other side.

The mode of action of the canals is, as I have said, still the subject of much discussion, and, as with experimentation so with the action of diseased and degenerative processes, it is difficult to decide whether we have to deal with a condition which excites or depresses the peripheral terminations of the vestibular nerve. Looking, however, to the results of destruction of the labyrinth, to the action of pressure on the nerve itself or on its pathway in the brain, and remembering that we are dealing with an efferent nerve, we may say that irritation of the canals leads to a tendency to fall towards that side, or to a sensation as if surrounding objects were moving in that direction, in which case there may be, as Dundas Grant remarks, an involuntrry and, as it were, compensatory inclination to fall towards the other side; if only one canal is the seat of irritation, the direction of the vertiginous phenomenon varies with the canal affected. Increased excitability of the canals or of one of them on one side causes the movement of the eyes in that direction which is translated by the opposing force of the opposite set of muscles into a nystagmus towards the ear involved. On the other hand, the sudden destruction of the canals or of the vestibular nerve on one side leads to deviation of the eyes to the opposite side and to a tendency to fall in that direction. After a time, a few days as a rule, when the destruction is at once complete, the eyes return to their normal position and the body equilibrium also comes again under control. In a case shown before the Otological Section of the Royal Society of Medicine in June, in which the vestibule and canals on both sides had been destroyed some time previously, there was only slight nystagmus and the patient could walk quite straight and with the eyes either open or shut. In deaf-mutes, too, who have afterwards completely or partially lost their sight, as happens sometimes in congenital syphilis, or in blind people who become totally deaf, equilibration is maintained, at any rate to a fair degree. So that de Cyon's contention that the loss of the spatial sense is made good by the sense of vision is not accurate. The patient referred to was, however, quite unable to recognize that she was being rotated when placed on a revolving table, and this fact has also been observed in certain deaf-mutes. In the interesting case of division of the auditory nerve for distressing tinnitus recently reported by Ballance, the deviation of the eyes to the opposite side lasted for only forty-eight hours. We may, therefore, take it that the canals are not essential to normal progression and equilibration, though in health they do perform a most important function. The same may be said, though not quite so definitely, with regard to the action of the canals on the eyes, for where the vestibular apparatus on both sides is destroyed, as in the case quoted, or as in certain cases where this has followed disease, a fine nystagmus may remain. The function of the canals with reference to equilibration may be illustrated by the see-saw. When the weight on one end is equal to that on the other, equilibrium is maintained; if the weight on one side, in this case the stimulation of the canals or of the vestibular nerve, is increased, the plank goes down on that side: if the weight on one end be suddenly removed, the plank goes down on the opposite side. In the first case in which Lake destroyed the labyrinth on one side for severe vertigo there was noticed for a short time after the operation a tendency to fall to the opposite side. The direction of the vertigo can sometimes be ascertained only by careful examination. The patient should be instructed to look up, to close the eyes with the feet placed together, to walk along a straight line with the eyes directed forwards or upwards, to jump backwards, to stand on an inclined plane, and to make the examination more thorough the inclination may be varied. The vertigo may only make its appearance on looking quickly towards the diseased side or towards the healthy side if one labyrinth is destroyed. In the same way the direction of the vertigo may be brought out by turning the patient round several times in a revolving chair. In disease I have not found that the direction of the revolution affects the result. Syringing the ear or even the introduction of a speculum may bring on an attack of vertigo. By experimenting on the healthy ear Babinski found that the positive pole applied to the labyrinth caused a rotation of the head to that side, whereas with the negative pole applied a more violent rotation toward the other side was obtained. No result was got after destruction of the labyrinth nor under chloroform narcosis.

The question of nystagmus is more difficult. Without going into the complex anatomy of the subject, we can state that there are important central connexions between the vestibular nerve and the nerves which supply the muscles concerned in the movements of the eyeballs, and especially with the sixth nerve of the same side. It would appear that the steadiness of the eyes is maintained—in part, at any rate—by the action within normal limits of the canals on both sides. If there is over-stimulation of those on one side, the eyes tend to move in that direction, but by the action of the opposing muscles what would otherwise be a deviation is turned into spasmodic contractions of an intensity varying with the amount of stimulation. In the milder forms the nystagmus only appears when the eyes are turned sharply towards one side or the other, more markedly, as a rule, when turned towards the affected ear, though frequently there is also nystagmus,

less in degree, when the eyes are turned in the opposite direction.

Wittmack and other observers have thought that in the non-suppurative ear affections the nystagmus is usually worse when the eyes are turned towards the healthy side. It is probable that with over-stimulation of the muscles which move the eyes in one direction there is also a reflex increase in the stimulation of the opposing set, so that on both sides we get a condition where complete and normal relaxation does not occur. Experiments seem to show that the direction of the nystagmus depends not only on the side on which the labyrinthine affection is, but also on the plane of the canal chiefly involved, so that we may get a double movement in which the eyes tend to move, say, to the left and downwards, and so on. If sudden destruction of the vestibular apparatus or of its connexion with the brain takes place, we get, as we have seen, strong deviation of the eyes to the opposite side. If the destruction is slow, we may get neither vertigo, nystagmus, nor deviation.

Before leaving this part of the subject, let me say a word about the function of the vestibule with regard to orientation—that is, our knowledge of the position of the body, or, rather, of the head in space. As stated by Horsley, "inclination of the head in any direction is recorded by the corresponding vertical canals according to the plane of movement, and the all-important rotation of the eyes, of the head, and, later, of the whole body, is made known to consciousness by the horizontal canals." Though this function has, of course, a distinct connexion with the maintenance of equilibration, it has primarily to do with our recognition of the position of the head and of the space traversed by it. If we look upon the maintenance of equilibration as the active function of the vestibule, we may consider this the passive. Except as regards the complete destruction of both labyrinths, to which reference has been made, I am not aware that disease of the labyrinth has been studied specially with reference to the knowledge a patient may have relative to various movements.

PATHOLOGY AND DIAGNOSIS.

Let us now look at this question from the clinical point of view, discussing at the same time the pathological conditions on which it depends, and at the outset let me say that it must be a question of great difficulty in many cases to decide whether we are dealing with a case in which the function of the vestibule is depressed, or is unduly excited by the irritation of early pathological changes, such, for instance, as increased tenderness of an inflamed cutaneous surface. A careful examination of the case in all its bearings must be made, the amount of hearing, the tuning-fork reactions, the appearance of the vertigo with reference to the tinnitus and deafness. Vertigo may be sudden and severe, occurring in a subject previously free from any aural affection. This was the case with Ménière's patient. Such a case is due to traumatism, haemorrhage, acute inflammatory exudation, or embolism. The severity of the phenomena will depend on the amount of destruction. If the labyrinth is completely destroyed we shall get complete deafness on that side, severe vertigo, tinnitus for a time, vomiting, and, it may be, a period of unconsciousness. In this case, after the vertigo has passed off, we would not expect to get a recurrence. In cases of incomplete destruction, however, though the immediate symptoms are not so severe the patient is liable to have recurring vertiginous attacks. Irregular movements of the eyes occur, and in some cases, as Lannois and Chavanne state, there has been noticed facial paralysis, and more rarely paralysis of other cranial nerves. A fatal issue is rare, though it did occur in Ménière's case.

In the large majority of cases of aural vertigo there has been a pre-existing pathological condition of the ears, either of the inner or middle ear, more rarely of the external auditory meatus. This aural condition may have been unrecognized even by the patient, and as we may, and do, of course, have affections of the auditory part of the internal ear leading to deafness, but without any vertigo or giddiness, so it is reasonable to suppose that we may get the static portion affected without any deafness resulting, but giving rise to vertigo or dizziness, whose dependence on an aural affection it would, under the circumstances, be difficult to establish. Careful tests would probably bring out this connexion if it should be sought for; hence there are some who state that all vertiginous phenomena, except those due to intracranial conditions are dependent on labyrinthine affections; indeed, even Sir William Gowers says that 90 per cent. of the cases of vertigo are due to ear disease. In this connexion it is interesting to note that, *post mortem*, changes have been found in the static portion of the internal ear while the auditory portion has appeared healthy.

As I have said, the trouble in the ear may be in its external, middle, or internal part. The simplest case is that in which a collection of cerumen has given rise to dizziness, or even to vertigo. The cause of this is somewhat difficult to decide. It may be due to increased pressure acting through the membrana tympani, and then through the fenestra ovalis, or the plug of wax may lead to some congestive condition of the labyrinth by the interference with an abnormally free intercommunication between the veins of the internal ear and those of the tympanum and postericr wall of the meatus, or it may be altogether a reflex action. In the same way, water getting into the ear, even with the tympanum intact, has caused vertigo; and it is an interesting speculation whether some cases of drowning may not have been thus caused—a hypothesis far from unlikely when the person has been the subject of middle-ear suppuration. A foreign body—a fly, and so on—may in the same way cause vertigo. The prognosis in these cases is, of course, quite favourable.

Coming now to the middle ear, we may say that all affections of this part may lead to changes in the labyrinth. In the great majority of chronic non-suppurative diseases of the middle ear the internal ear becomes secondarily involved. As a rule, this takes place on both sides so gradually that nothing in the nature of vertigo beyond a very slight feeling of dizziness is complained of. In cases of one-sided middle-ear affection this freedom is not so usual. Moreover, when the protective power of the tympanic membrane and ossicles is weakened, causes which would otherwise do no harm may lead to severe damage to the labyrinth. A loud noise, as the firing of a gun, a band, especially in an enclosed place, and so on, has brought on a vertiginous attack, and the injury in such a case to the canals—it may be congestion, laceration, or haemorrhage—may be the beginning of recurring and severe vertigo. Apart from these sudden attacks, we do often get vertigo dependent on non-suppurative middle-ear affections. What the actual condition in the canals is it is difficult often to determine. Probably in most there are degenerative changes. Horsley states that we do not get true forced rotation from pure middle-ear disease, but only when the labyrinth or vestibular nerve is involved. In some the attack may be due to increased pressure exerted through the footplate of the stapes. An examination of the hearing by the various tests will in some show that the deafness is definitely of labyrinthine origin. In some, however, the middle-ear affection itself is the cause of the deafness. In many the condition is evidently of a mixed nature. In acute catarrhal and in acute suppurative conditions of the middle ear temporary vertigo is common, but passes off with the improvement in the tympanic disease, though in a certain number the damage to the internal ear is of a permanent character, and may show itself by complete or partial deafness of a labyrinthine character with or without recurring vertigo or dizziness. In children especially we must be on the look-out for an acute labyrinthitis such as described by Voltolini. The attack begins with meningeal symptoms, but consciousness is retained. Deafness comes on quickly, and usually becomes absolute in a day or two. Giddiness is observed if the child sits up, and may be severe. In a few days the attack subsides, but the child remains as a rule permanently deaf, and, depending on its age, deaf-mutism results. I need only mention that secondary changes in the labyrinth occur sometimes in meningitis, basic, tuberculous, or cerebro-spinal. In such cases there frequently remains a fine nystagmus, but vertigo is not a prominent feature.

We now come to a most important question, namely, the relation of vertigo to chronic middle-ear suppuration. Dizziness is by no means an uncommon accompaniment of this affection, and in many cases actual vertigo can be made manifest by the application of various tests, and the same holds with reference to nystagmus. In the great majority of these cases the vertigo is of mild degree, and

is probably dependent on the same conditions which give rise to it in the non-suppurative middle-ear affections, that is to say, it and the nystagmus will have the direction got in irritation of the vestibular nerve. At the same time, it is a symptom which deserves very careful attention, and, whether it increases in severity or not, if it is associated with rapid decrease in the hearing and with a loss of bone conduction and of perception for the higher notes it is a danger signal which should not be disregarded. If, in addition, on alterations of pressure within the meatus by the airbag or by a pneumatic speculum, or if on gently syringing the ear an attack of vertigo with or without nausea is caused, then the demand for the performance of the radical mastoid is imperative. If the vertigo should change in type with a tendency to fall towards the opposite side or with a sensation of surrounding objects moving in a direction contrary to that in which they had previously appeared to move, and if the nystagmus should change in direction or if deviation of the eyes to the opposite side should show itself, then one would be right in suspecting the destruction of the labyrinth by the suppurative process. It must be stated, though, that infection of the labyrinth going on to destruction of the membranous contents has been not infrequently found without a history of either vertigo or nystagmus. In such a case the probability is that the membranous labyrinth has been destroyed by a slow inflammatory process in advance of the suppuration. It need hardly be said that it should be our aim to anticipate by operation the spread of the suppurative process to the internal ear with the great risks of intracranial infection which thereby follow. During the performance of the radical mastoid operation the inner wall of the tympanum should be carefully examined for carious points or for a sinus leading into the labyrinth, and this advice applies especially to the region of the external canal and to the oval window. In the great majority of cases, where a timely operation is performed, nothing will be found to make it necessary to open into the internal ear, and the symptoms will slowly subside after the middle-ear cavities have been efficiently dealt with. Such a case, however, should be carefully watched.

Now we come to a question of differential diagnosis. It is a matter of much difficulty at times to determine whether we have to deal with a suppurative labyrinthitis or with an intracranial complication, especially with a cerebellar abscess, in which not unusually the route of infection is via the internal ear. The difficulty is increased in that the cerebellar abscess may be situated in the middle or lateral lobe, or even, as rare cases have shown, in the lateral lobe of the opposite side. It has been said that one is more likely to find a cerebellar abscess at a distance from the primary infection than is the case with cerebral abscess. By far the most usual, however, is an abscess in the lateral lobe of the side on which the ear disease is. Moreover, in the early stage, at any rate, and before complete destruction of that lobe takes place, the lesion, as regards the vestibular nerve, is an irritative one, and, as Horsley and Ballance have shown in the case of extra-cerebellar tumours, and Stewart and Holmes from experiments, an irritation of the vestibular nerve in its course or in its cerebellar connexions leads to a tendency to fall to that side, as is the case with irritation of the labyrinth; whereas in labyrinthine destruction, as by suppuration, the vertigo is in the other direction. At the same time, it must be remarked that, as a rule, cerebellar abscesses are not seen in the early stage, and in reported cases the direction of the vertigo is rarely remarked. Macewen states that vertigo occurs in the early stage of cerebellar abscess, but he also remarks that there are few localizing symptoms at this period. In one of his cases, a child of 3 in whom the right internal ear was destroyed by suppuration, and in whom ultimately a superficial abscess was found in the roof of the fourth ventricle, with also thickening of the dura over the right side of the cerebellum, there was a tendency to fall to the right side when being sat up in bed by the nurse. Maccuen Smith states that intracranial complications of aural suppuration, such as thrombo-phlebitis of the lateral sinus and extra-dural abscess, may cause vertigo towards the diseased side. With reference to nystagmus in cerebellar abscess, Whitehead observed in a case successfully treated by operation that this symptom was obtained on extreme rotation of the eyes to the side of the disease. An adaptation of Barany's test may prove of help in differential diagnosis. He found that cold water poured into the ear is followed by a tendency to fall towards the other side, and that water above the temperature of the body has the opposite effect. Nystagmus, too, in similar direction is caused. If the labyrinth on one side is destroyed, cold water poured into that ear will have no effect in producing vertigo towards the opposite side or in controlling or overcoming a vertigo in the direction of the diseased ear which may be present, nor will nystagmus result or a present nystagmus be affected. I have frequently used Barany's test in patients, and in those in whom the tympanic membranes have been destroyed by disease, so that the fluid could get into contact with the inner tympanic wall on both sides, the results have confirmed his claims; in patients with intact membranes the results in my hands have been inconclusive. In differential diagnosis this test will give valuable help.

Apart from intracranial affections, and especially cerebellar abscess, occurring as complications of middle-ear suppuration, we shall sometimes have to decide between the possible aural or intracranial origin of vertigo where there is no suppuration. The case may be one of cerebellar tumour causing irritation or destruction of one of the lobes of the cerebellum or of the vestibular nerve. Again, the condition may be really of the nature of epilepsy, or we may have to deal with some affection of the nervous system, such as locomotor ataxy or of some general disease, such as Bright's disease or severe anaemia. Ocular defects, too, may give rise to dizziness or vertigo, which, as a rule, disappears on closing the eyes. I have also seen vertigo associated with disease of the sphenoidal sinuses. In all cases of difficulty a diagnosis can be made only after a most thorough examination of all the symptoms; of the eyes for optic neuritis and for the degree of neuritis, of the general muscular system for the presence of paralysis, and, of course, of the ears by the various tests at our disposal. It is so usual to find alterations in hearing and changes in the ears that it must not be concluded from these that the vertigo is necessarily dependent on the aural condition. In few affections is co-operation between the specialist and the physician likely to be more helpful than in this.

COURSE.

As I have before said, if the destruction of the vestibular apparatus is at once complete the first attack of vertigo will be the last. In cases in which the effect on the labyrinth is temporary the vertigo passes off, and the ear may return completely to normal. In many cases, however, a constant dizziness remains, with recurring attacks of severe vertigo, or indeed there may be constant vertigo of such severity that the patient is quite incapacitated from work. There may be accompanying tinnitus and nausea, or these may usher in an attack. In most cases the auditory part of the internal ear is also the seat of pathological changes showing themselves by increasing deafness. Indeed, the only termination that one can hope for in many cases of severe vertigo is complete disorganization of the internal ear when this distressing phenomenon disappears, but complete deafness results. In the recurrences of vertigo it is not always possible to decide on the exciting cause. Certain it is that anything which leads to cerebral congestion may bring on an attack. In cases in which unabsorbed blood pigments or the results of exudation remain in the labyrinth the attack may be referred to a summation of stimuli.

TREATMENT.

As regards treatment, this naturally has reference especially to the underlying aural affection, and in giving a prognosis one has to take into consideration the possibility of the amelioration of this condition, and also the period of association of the deafness and vertigo. In non-suppurative affections of the middle ear in which the vertigo has shown itself much later than the deafness or tinnitus, it has seemed to me that the treatment of the aural condition was more likely to lead to its improvement or disappearance. In treating the symptom itself the drug of most efficacy is quinine. Charcot instituted this treatment on the principle that it gradually destroyed the hearing, when, as we have seen, the vertigo disappears. On the other hand, Urban Pritchard reports a case of severe

vertigo from a poisonous dose of quinine. It is, however, not necessary to give it in such large doses. Given a grain at a time, it seems to reduce the irritation of the vestibular nerve, probably by overcoming congestive changes. On the ground that vertigo is due to anaemia of the labyrinth, which, however, is probably not as a rule well founded, Lermoyez suggested the use of amyl nitrite. We are all aware, of course, that in conditions of severe anaemia vertigo is common, but whether this is an aural phenomenon or not, even when associated, as it often is, with tinnitus, is a doubtful point. At the same time it is quite possible that the actual cause of vertigo is not so much either congestion or anaemia as the alterations in the pressure of the endolymph which may be brought about by either of these states. The bromides and iodides are sometimes useful, and pilocarpine, especially in patients in whom the aural condition is dependent on congenital or tertiary acquired syphilis, has sometimes seemed of value. Repeated lumbar puncture has been used with some, though probably only with temporary, benefit. Patients should be advised to eschew alcohol, tea, coffee, and tobacco, to avoid as far as possible mental excitement and loud noises, and to keep the bowels acting well. During a severe attack the recumbent posture should be enjoined, with ice to the side of the head. When all other measures fail, and when life is made practically intolerable, the advisability of destroying the labyrinth—at any rate the static portion of it—should be entertained. I am referring now to cases of non-suppurative ear diseases. This has been carried out in this country by Milligan, Lake, and Yearsley; or, as Ballance suggests may yet be possible, the vestibular nerve, as distinct from the auditory nerve, may be divided before it enters the internal auditory meatus.

ON LEAD POISONING IN CHILDHOOD.*

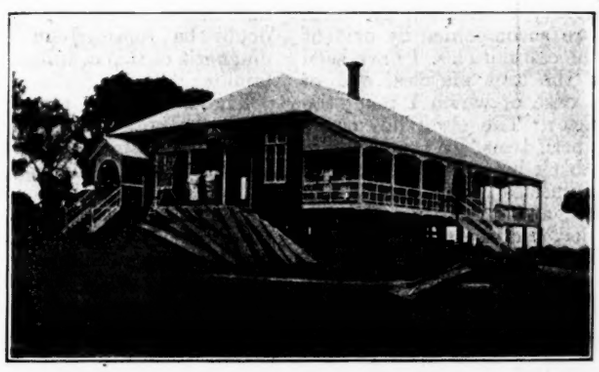
By A. JEFFERIS TURNER, M.D.Lond., D.P.H.Camb.,
BRISBANE.

THOUGH lead-poisoning is practically unknown among adults in Queensland, except among those specially exposed to it by occupation, such as painters, yet lead-poisoning among children is not uncommon in every township in Queensland. By not uncommon I mean that every medical man practising among children should probably see several cases every year. The causation of the disease has been ascertained, and that similar cases must occur in all those parts of Australia in which similar conditions may happen to prevail.

The symptoms of lead poisoning in children differ from those found in adults in certain important particulars, which have not yet found their way into the textbooks, and as a consequence the real nature of the affection is very frequently overlooked or misunderstood.

ETIOLOGY.

My experience is confined mostly to Brisbane. I see cases rather commonly in private practice, more commonly since I have come to recognize the milder cases and earlier stages. A few of these cases have come from other towns. The records of the Children's Hospital show that 262 cases have been treated as in-patients since 1891, and at present some 20 cases are being admitted every year.



The cause of lead poisoning among Queensland children has been most convincingly demonstrated by Dr. Lockhart Gibson.[1] Nearly all the dwellings in Queensland are built of wood, and in the towns the wood is covered by paint consisting largely of white lead. Exposed to our hot summer sun this paint rapidly withers and becomes reduced to a powdery condition. This is particularly noticeable on verandah railings. The verandahs are favourite playgrounds for young children, who clasp the railings with their moist hands, which become covered with poison. Thence it finds its way to the child's mouth, especially in children who suck their fingers or bite their nails. Dr. Gibson's investigations explain:

1. Why the disease is found in children from all towns in Queensland, but appears to be unknown in the country, where the houses are of wood but not painted.
2. Why it is most prevalent in the summer months.
3. Why it frequently picks out one child only in a family, attacking the one who bites his fingers or sucks his thumbs, or who plays habitually on the verandah, etc.

Similar cases must occur in any districts of the other States, if such exist, where the dwelling houses are similar, even though such cases may have never been recognized.

I do not mean to deny that lead poisoning may occasionally but rarely occur among Queensland children from other sources than that here given, but I have no doubt whatever that this is the cause of the endemic prevalence of this form of sickness.

SIGNS AND SYMPTOMS OF LEAD POISONING IN CHILDREN.

There are two signs of lead-poisoning in children that are not, properly speaking, morbid symptoms, but which are of great value as indicating the presence of lead in the tissues.

First, the so-called "blue line" on the gums. A continuous line is rather exceptional in children; what we usually see are small blackish dots at the extreme edge of the gum opposite some of the teeth, more particularly those that are not so clean as the rest. They are frequently minute, and need to be looked for in a good light, and sometimes with the aid of a lens. I repeat, they have to be looked for; on a casual inspection they will certainly be missed. Where there is actual pus exuding from the gum I have seen a dark black line on the edge of the sinus, and even discoloration of the cheek opposite to it, but this is rare. A discoloration of the base of the tooth itself is no sign of plumbism; and doubt as to the site of the blackness may be at once removed by inserting the edge of a piece of stiff notepaper between the gum and the tooth. These dots in the gum are pathognomonic. But they may occur in the absence of symptoms. When a child exhibits symptoms of plumbism an examination of the teeth of its brothers and sisters will sometimes reveal the presence of the dots in them, though they are in apparently good health. This *stigma* of plumbism may, as I have observed, be followed later by the usual symptoms. On the other hand, the complete absence of lead dots is of no importance in diagnosis. The lead dots are particularly likely to be absent if the child has a clean set of teeth.

The second *stigma* of plumbism is the presence of lead in the urine. The detection of traces of lead in this fluid should be the task of a trained analyst. Lead is by no means constantly present in the urine of these children, therefore little weight, if any, should be given to a single or even several negative findings. On the other hand, the presence of lead in the urine is positive proof that the metal has been absorbed into the system. For clinical purposes an analysis of the urine is, I think, seldom necessary.

1. *Gastro-intestinal Symptoms.*

These correspond to the lead colic of adults, but are less defined. The child complains of abdominal pain, which is often plainly of a colicky nature. There is no abdominal tenderness, but pressure frequently gives relief. Vomiting, often persistent and lasting for several days, is a usual accompaniment. During this time all food is often rejected, with complete impartiality. The bowels are

* Presidential Address delivered at the Section of Diseases of Children of the Australasian Medical Congress held in Melbourne, October, 1908.

usually constipated, but this is not invariable; sometimes there are rather frequent small stools containing much mucus.

If these symptoms are accompanied by dots on the gums the diagnosis is easy. If the latter are absent it may be difficult, but may often be made with a high degree of probability.

One feature of these attacks is that they are independent of the nature of the food the child has taken, and another is their periodicity. If a child is brought with a history of attacks at intervals of a few weeks or months, during which it is continually vomiting and complaining of abdominal pain, while in the intervals it eats everything without suffering, plumbism should be strongly suspected. If pain in the legs accompanies that in the abdomen, plumbism may be safely diagnosed; and when the child—perhaps after several attacks—begins to drop its toes when walking, there is no longer any room for doubt.

In doubtful cases the fingers should be inspected to see if the nails are bitten, and if the house is visited the condition of the paint on the verandah railings and other parts, together with the habits of the child as to play, etc., should be inquired into.

2. *Paralysis of the Muscles of the Limbs.*

Lead poisoning and wrist-drop are so closely associated in the mind of the profession that it is necessary to say at once that wrist-drop is *not* the most characteristic paralysis in childhood. It is frequently absent in children under 12 years of age. When present it is never the first paralytic symptom. The feet are invariably affected first, and are invariably the last to recover. This is so in my experience at least.

The earliest muscles to become paretic or paralysed are the tibialis anticus and extensor longus digitorum pedis. The child drops its toes in walking, and the nature of its ailment can be recognized as it walks into the consulting room. There are, of course, other causes of this form of paralysis, such as arsenical and alcoholic poisoning and beri-beri; but I have not so far met with any instance in which these have complicated the diagnosis. The peronei are also frequently attacked and occasionally suffer worse than any other muscles. In the forearm the extensors of the fingers are attacked before those of the wrist, as is the case in adults. Paralysis of the small muscles of the thumb, accompanied by wasting, is often seen in severe cases, and the interossei may be similarly affected. In the muscles of the hand paresis and wasting appear to be simultaneous, and in this respect they differ from the muscles of the forearm and leg.

A very common symptom attending the onset of the paralysis is pain in the muscles of the legs. This comes on especially at night, when the child frets and cries and cannot go to sleep. The pains are usually accompanied by tenderness of the muscles, but may be relieved by warm foments. When severe they are accompanied by evident cramp, affecting particularly the calf muscles. I have seen extremely painful cramps of the back muscles, and of other muscles, also, as in a case of which I made the following note during an attack: "The child lies on its face, embracing a pillow with both arms. When the pain comes on the head is thrown back by spasmodic contraction of the back muscles, the muscles of the arm are in tonic spasm, the legs are flexed, and hamstrings forcibly contracted. The legs are tender, and the slightest touch causes the child to cry out. The abdomen is not tender, and stands firm pressure well. The mind is perfectly clear; the child is very intelligent." This was an extreme and very unusual condition.

If the child is removed from the source of the poison, the forearm muscles usually recover in a few weeks, those in the hand more slowly. The leg muscles are much more slow to recover; three months may suffice in recent cases, but some take much longer. Talipes equinus may persist after the anterior muscles have regained contractility, and it is then necessary to divide the tendo Achillis. Complete recovery is usual. In old cases with relapses—in some the history had spread over several years—I have seen apparently incurable paralysis, but in the light of recent advances in the treatment of paralyses I am not sure that any case should now be regarded as hopeless.

3. *Diaphragmatic and Cardiac Paralyses.*

One of the less frequent symptoms of plumbism is paralysis of the diaphragm, of which I have seen a fair number of cases, but only in patients suffering from the usual paralyses of the legs. In itself it is not a serious symptom, for this paralysis gives rise to no embarrassment of respiration in a child lying in bed, and will, indeed, escape observation unless carefully looked for. Most of my cases were old-standing cases of plumbism, but I have seen diaphragmatic paralysis in a first attack. When it comes on acutely, I regard it with grave anxiety, for two or three times I have seen it accompanied or followed by fatal cardiac weakness. This is characterized by excessive weakness and rapidity of the pulse, intense general depression, and vomiting, without any intellectual disturbance; death occurs usually within twenty-four hours. I am unable to explain these symptoms, but they are very similar to some fatal cases of poisoning by diphtheria toxins, which occur in a late stage of that disease.

4. *Remote Effects: Anaemia, Albuminuria, Nephritis.*

Old-standing cases of plumbism are frequently distinctly anaemic, with sallow complexions. This is not so in recent cases.

Transitory albuminuria is not uncommon. Chronic interstitial nephritis is, I believe, an occasional but rare complication. A case which ended fatally has been reported by Dr. T. E. Green.[2]

5. *Eclampsia.*

Now and again children suffering from chronic plumbism develop eclamptic seizures. These do not differ symptomatically from convulsions due to other causes, but are of a severe type and not infrequently fatal, even when treated with the greatest skill from the onset. I believe that a good many cases of fatal convulsions in Brisbane are the effect of undetected plumbism. A few months ago I was called in consultation to see a boy dying from protracted convulsions. Careful inquiry failed to elicit any exciting cause, but an examination of the gums revealed the typical appearances caused by the deposit of lead sulphide.

6. *Acute Optic Neuritis associated with Oculo-motor Paresis.*

The far-reaching effects of plumbism in childhood are not yet exhausted. The most insidious and most damaging I have not yet mentioned. There is a totally distinct clinical complex, first recognized by myself long before I had any idea of its causation, and described at the Intercolonial Medical Congress of 1892 as "a form of cerebral disease characterized by definite symptoms, probably a localized basic meningitis." I mention this purposely, as it is with meningitis and cerebral tumour that this form of lead poisoning is most likely to be confounded. This mistake has been made frequently in the past, and will no doubt be repeated in the future. Nevertheless, the diagnosis of this condition is not as a rule difficult to those familiar with it.

These cases are usually brought to us complaining of headache, which may be severe and persistent, and may be accompanied by vomiting. We observe at a glance that they have an internal squint. Sometimes the squint is the symptom for which they are brought, but on the other hand it may be so slight as to have escaped the mother's observation. On inquiry we learn that the squint is recent, and on examination we find that it is due to paresis of one or both external recti. This ascertained, we proceed to examine the optic discs, and discover optic neuritis, so intense in most cases as to be evident even to the tiro in ophthalmoscopy. This symptom complex is due to lead poisoning. We proceed to verify our diagnosis. In default of any corroborative evidence of lead, we must remember that a cerebral tumour, cerebral tubercle, or cerebral syphilis, *might* produce exactly these symptoms and no other; but it has happened in all the cases of tumour or cerebral syphilis that I have seen, that other symptoms not characteristic of lead have been present; so that the probability of a case such as I have described, occurring in Brisbane, or any town similarly painted, being due to any other cause than plumbism appears to be very small.

In more severe cases, which are less often seen, the cerebral and ocular symptoms are more pronounced. We

see these children usually in bed. In addition to headache, there may be severe pains in the back of the neck running down into the arms. The head may be retracted. Both external recti are completely paralysed, and some, or all, the muscles supplied by the third nerve (except the levator) may be paralysed also. There may even be immobility of the pupils. These cases are frequently confounded with meningitis. It is a natural, perhaps an inevitable, mistake, but inspection of the gums may save even the inexperienced from error. If the gums are clean the bitten finger-nails may arouse his suspicions. The course of the case is not that of an ordinary meningitis. The child almost always makes a perfect recovery except as to vision. I can remember only one of these cases that proved fatal, unless convulsions supervened, but there is almost always some loss of sight, which may be total.

Blindness due to optic atrophy, and therefore permanent and hopeless, is the unfortunate consequence of a large percentage of these cases of plumbic ocular neuritis. It may occur in the milder cases in which only the optic and sixth nerves are involved; when the third nerve is implicated, escape from at least partial loss of vision is rare. In many cases the blindness is absolute, in some there is only great impairment of vision. The suddenness with which this is lost has struck me forcibly. One day there may be nothing to suggest defective vision, within the next two days the child may be found apparently quite blind. Fortunately the great majority of the milder cases recover perfect vision if they come under treatment early.

It is a remarkable thing that children who suffer from ocular neuritis do not suffer from limb palsy. I have never seen the conditions combined. Dr. Lockhart Gibson has once observed wrist-drop in a child suffering from ocular neuritis, and two or three cases in which the limb palsy had preceded or followed ocular neuritis at an interval of many months. Cases of the two forms occurring in the same family are not so rare.

A large proportion of lead poisoning in children take on the form described in this section. Of 89 cases of plumbism admitted during the last four years into the Children's Hospital, Brisbane, 20 were of this variety, that is, 22.5 per cent.

7. *Chronic Optic Neuritis and Atrophy without Paresis of Sixth Nerve.*

These cases are much less often seen than the preceding. I have no experience of them, and Dr. Lockhart Gibson has only recognized them within the last three years. The symptom complained of is loss of sight, and the ophthalmologist is most likely to be consulted. The course is slow, and they respond well to treatment, if not too advanced. Diagnosis can only be made by finding evidence of lead in the system, or of exposure to the causes of plumbism.

Preventive and Curative Measures.

There may be, and doubtless are, other conditions attributable to lead than those recognized, but those I have described are sufficient to show that lead poisoning among children is a serious evil. Prevention is easy. Paint containing lead should never be employed on outside surfaces, such as fences, walls, and particularly verandah railings, in places where children, especially young children, are accustomed to play. Zinc-white, or some other paint free from lead, should be substituted. Unfortunately we in Brisbane still from ignorance, no longer excusable, allow our houses to be poisoned traps for children's fingers, and every year furnishes its quota of ill-health and suffering, crippling, hopeless and permanent blindness, and occasionally death as the consequence. This is certainly a matter which calls for legislative interference.

The curative treatment consists essentially in removing the child from the source of the poison. We adopt also other measures calculated to encourage the elimination of lead from the system, but to what extent these are efficacious must be a matter of doubt. By themselves they are useless. Removal of the child into a hospital is a short way of taking it out of danger. But after its discharge it will surely relapse if the home conditions remain the same. We must find out exactly where the child got the poison, and warn the parents to keep him away from it, remembering that lead paint is only dangerous (1) when it is fresh and sticky, or (2) and more especially when it is dry and powdery. It is also well to break the child of the habit of nail-biting or thumb-sucking, which by the way is no easy task. The most effectual method is to put straight splints over its elbows. This may seem harsh treatment, but milder methods usually fail.

References.

[1] *Australasian Medical Gazette*, 1904; The Transactions of the Australasian Congress. See also British Medical Journal, 1908, vol. ii, p. 1488. [2] *Australasian Medical Gazette*, October, 1897.

A CASE OF CROSSED PARALYSIS.

By GORDON LAMBERT, M.D.Cantab.,

SELSBY, SUSSEX.

The following case, though not very unusual, presents, I think, certain features of interest:

W. J., aged 59 years, farmer and dairyman, had been very "irritable" for some days before February 7th. On that day he got out of bed at 4 a.m. to pass urine. Immediately after doing so, he became very giddy and fell down; but he did not lose consciousness. He returned to bed, with assistance, and afterwards insisted on making several attempts to walk. I was summoned to him at 8 a.m., and I found the following physical signs:

Nervous System.—Upper segment paralysis of the face on the left side, partial paralysis of the right motor oculi nerve, ptosis, slight divergent strabismus, limitation of movements of the eye (chiefly inwards), diplopia. On my arrival the right eye was completely closed; but the patient persisted in making voluntary efforts, until he completely raised the upper eyelid. The pupils were equal and reacted to light and accommodation. The left arm and leg did not show any loss of motor power; but the knee-jerk was distinctly brisker on the left side.

Heart.—Apex beat not palpable. Apex localized by percussion and auscultation in fifth left interspace, nipple line. Heart sounds faint and distant; aortic second sound not accentuated. No bruit.

Pulse.—Regular, 90 odd, of small volume, moderate tension. Radial arteries tortuous and uniformly thickened; no discrete, nodular thickenings.

Urine.—Specific gravity, 1018. No albumen. (Urea not estimated.) Patient has passed urine during the night for several years, nearly every night. He estimates that he passes from three to four pints per diem.

Previous History.—The patient had been a temperate man, and had done a great deal of heavy manual work. He had had one severe illness only, an attack of influenza 16 years ago, during a severe epidemic.

Progress and Result.—Motor power was rapidly regained during the first week, and on February 22nd the facial paralysis was no longer evident. Diplopia persisted; but the limitation of movements of the right eye was distinctly less. The ptosis had quite disappeared. The pulse was regular, 82, of moderate volume and tension. The physical signs in the heart were as before. The urine—specific gravity 1018—contained no albumen.

The case is clearly one of crossed paralysis due to a lesion in the right crus cerebri, involving the fibres of the motor oculi nerve and the facial fibres of the pyramidal tract. It is justifiable to assume that the nucleus of the motor oculi is not involved.

The chief interest centres on the nature of the lesion. Is it a very limited haemorrhage, presumably from one of the deeper small arteries (of the "ganglionic system") or thrombosis of such a vessel? Arterio-sclerosis is certainly present; but the condition of the heart and pulse, taken in conjunction with the history of severe influenza, seems to make the probability of haemorrhage doubtful. The onset is interesting. The giddiness and falling are, of course, not unusual after evacuation of the bladder—the splanchnic vessels being rapidly filled with blood and transient ischaemia of the brain established. There is no evidence that the act of micturition is accompanied in this patient by any special effort of straining, which might produce a haemorrhage, that is, by raising tension, in spite of the upright position and the evacuation of the bladder. The involvement of the facial fibres and the escape of the arm and leg in a lesion of the crus cerebri is also interesting, as indicating very limited damage.

The Committee on Legal Affairs of the Massachusetts Legislature, to which the Antivivisection Bill was referred this year, has reported leave to withdraw. This, it is said, is the eleventh or twelfth time that such a bill has been presented to the legislature and has met with the same fate in committee.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE ASCENDING PARALYSIS.

The case of acute ascending paralysis reported by Dr. Dean in the British Medical Journal of February 27th, p. 529, reminds me of a case which occurred very early in my professional career, fifty-three years ago. I had joined the Indian Medical Service the previous year, and had proceeded to Kurrachi, in Scinde from Bombay, on general duty, as it was termed, before being definitely attached to a regiment as medical officer. In 1856 I was temporarily placed in charge of the civil medical duties of the station, which included the members of the staff of Government House, and whilst so serving General John Jacob, Commandant and Political Officer of the Frontier, came down to act as Commissioner in Scinde during the absence of Sir Bartle Frere in England. I was called to see a native officer on his establishment who had been seized with paralysis. I found that he had but recently recovered from an attack of choleriac diarrhoea, when symptoms of loss of power over the lower extremities had set in, commencing with the feet, and rapidly—that is, within a day or two—had extended upwards.

When I saw him the paralysis of motion was complete as high up as the diaphragm, and respiration was becoming difficult, but the arms were only slightly affected. I learned that the symptoms had very rapidly extended during the past few hours. It occurred to me that this was a case in which strychnine might be of signal service, and I proceeded at once to administer it in full doses, and pushed it in my youthful zeal to an extent which in later years I might have hesitated to adopt. The treatment was entirely successful; within a few hours the upward ascent of the paralysis was stayed and improvement began and progressed downward as steadily as the attacking symptoms had done in the opposite direction, until he was, in the next twenty-four hours, able to sit up in bed, then regained the use of his legs, and within a few days had recovered from any symptom of paralysis.

This was ten or twelve years before Landry published his notable paper on this disease, and although I have since had great opportunities of watching disorders of the nervous system I have never personally met with another case. It may possibly have been a case of spontaneous recovery, but the sequence of events did not suggest this to my mind at the time. I may, perhaps, be allowed to add that the case proved a stepping-stone in my career, which led to a series of kindly acts of good fortune whose influence I can trace through a long period of service.

Henry Cook, M.D., F.R.C.P.,
Surgeon-General (retired).

Lee-on-the-Solent.

ETIOLOGY OF OXALURIA.

In this part of the Sylhet district of Eastern Bengal there are several races—Bengalis, Manipuris, Tipperas, Kookies, and Coolies, the last imported natives of the Central Provinces.

None of these races suffer from renal gravel in any form except the Manipuris, among whom it is very common. The Manipuris, the Tipperas, and the Kookies are all tribes of Mongolian origin, closely related in manners, customs, and language, and in appearance are the same people.

All the afore-mentioned races live under more or less the same circumstances, being agriculturalists. They have all more or less the same habits, with one great difference—namely, the Manipuris live on nothing but vegetables and fruit; they eat nothing in the nature of flesh, not even eggs, except one caste amongst them, which eat sometimes putrid fish. The gravel they suffer from is calcium oxalate. The urine is always very acid, contains blood and enormous quantities of oxalate of lime crystals, ranging in size from those requiring a one-sixth objective to a stone large enough to temporarily stop a normal urethra.

These urines when looked at fresh contain no other crystals. They complain of the ordinary symptoms of renal gravel. The symptoms and the pathological condition of the urine entirely disappear on the administration of urotropine and potassium citrate.

All the water in this part is prominently deficient in calcium salts when examined chemically. The soil is peat for about 20 ft. deep, and underneath that is yellow clay for huge depths. Man, clinically speaking, suffers greatly from the want of lime. He gets covered with boils, carbuncles, etc.; he suffers from conditions clinically allied to scurvy. Imported Australian horses suffer from similar diseases. All these ills in man and horse are quickly cured by liberal doses of calcium chloride, and are also prevented by regular doses of this salt. If imported horses are given slaked lime in their water they remain healthy. This clearly shows that for the animal economy there is a great deficiency of calcium in both the water and vegetation of this neighbourhood. Therefore, for the formation of calcium oxalate crystals excess of calcium is not required; some other factor or factors must be the cause.

Considering the above remarks on the similar habits and surroundings of these different races, and of three which are of the same blood, and that only the purely vegetable eaters suffer, and that those who eat along with their vegetables a certain amount of animal food do not suffer, and also considering the great deficiency of lime here, one is driven to the conclusion that a purely vegetable diet is here, at all events, the cause of oxaluria.

R. W. Burkitt, F.R.C.S.I.

Chandkira P.O.

ERYTHEMATOUS ERUPTION FOLLOWING NITROUS OXIDE ANAESTHESIA.

Nitrous oxide gas was administered in the usual manner (valves) to a young man aged 21, perfectly healthy and free from organic disease, but of neurotic temperament. At 10.45 a.m. six teeth were extracted, and the operation calls for no comment; the patient was perfectly quiet throughout it. Recovery was normal without excitement, and haemorrhage soon ceased. The patient rested for an hour and a half, and then went home some few miles by tram.

On arrival at his destination, he felt some slight pain in the jaw with some vertigo, and in consequence lay down again. About 3 p.m. a dusky red patch appeared on the right cheek, in colour resembling a birth mark; the margin was sharp but irregular, not raised, and unattended by any sense of heat or itching. This faded in about one hour, and the patient partook of a little bread and milk. At 6 p.m. there was a feeling of slight nausea, and he vomited once. Almost concurrent with this a rash appeared all over the face. It had the same deep-red appearance as the former; at first mottled, it slowly became uniform. Circumoral and nasal pallor, with a well-defined irregular margin all round, was marked. The discoloration involved the ears and forehead, but did not extend on to the neck or scalp. There was no rash elsewhere. It faded completely in two hours, and has not recurred.

I have been unable to find any other factor to account for this, and there had been no previous attack. The patient was in my company from 6 p.m. the preceding evening, till the final fading of the rash, so I can vouch personally for all the circumstances. I am unaware of any similar instance of an eruption following nitrous oxide.

T. W. S. Hills, B.A.Cantab., L.S.A.Lond.

London, W.

ACUTE RHEUMATISM WITH UNUSUAL SEQUENCE OF COMPLICATIONS.

The following case is remarkable, owing to the occurrence of so many separate complications in one patient at one time, and yet all appearing at short though well-marked intervals.

On December 8th I was called to see E. W., aged 18; he had rheumatism in both wrists and knees and at times in the ankles; the tonsils had been "sore" for a day or two. The temperature was 100°. These symptoms yielded in the course of a few days to the ordinary treatment by milk diet and sodium salicylate. The temperature was down to normal in three days, and on December 21st the patient got up without leave.

On the evening of December 23rd I was sent for and found him out of bed, with a very flushed face, dry skin, and rapid and painful respirations. The temperature was 102.6°. There was tenderness over the outer half of the left thorax, which was dull on percussion; on auscultation

a slight pleuritic rub was heard, but no râles or rhonchi anywhere: the heart sounds were perfectly normal. Next day the pleurisy had extended slightly, and there was now a well-marked triangular dullness over the cardiac region and a distinct pericardial rub. The temperature was 102°. The same evening slight crepitations were to be heard over the right base behind.

On December 25th the pleuritic pains were less, but there was pain over the heart area and râles, loss of tactile vocal fremitus, and dullness over the entire lower lobe on the right side behind.

On December 29th pleurisy had nearly cleared up, but râles and dullness appeared over a small patch of the left lower lobe behind. The temperature remained very steady at 102°. The patient was now taking sod. salicylate gr.x every four hours, and from this day started brandy ℥ss every four hours; the precordial area was painted with linimentum iodi fort.

On December 31st the pericardial rub had almost gone, but in its place appeared loud presystolic and systolic mitral bruits.

On January 1st, 1909, the patient was put on tinct. digit. and tinct. nuc. vom. with sp. aeth. nit. There was pain over the heart, and the impulse was now outside the nipple line.

On January 7th the temperature came down to 101°. The ears were very blue, but breathing was not very difficult.

On January 9th the temperature was 99° and the pain had nearly gone. From this date the patient made an uninterrupted recovery, except that after his first walk outdoors on January 25th he had a slight return of rheumatic pains in the knees which quickly yielded to sodium salicylate. On January 22nd the heart's impulse was in the nipple line, and by February 2nd the impulse was normal and all bruits had entirely disappeared.

The point chiefly noticeable in this case is the well-marked sequence of rheumatism, pleurisy, pericarditis, and pneumonia of first one and then both sides, and finally rheumatism again. The delayed crisis was due to the onset of pneumonia in the left lung five days after its appearance in the right lung. The excellent effect of brandy was very apparent.

Lowestoft. C. M. L. COWPER, M.R.C.S., L.R.C.P.

UNNA'S METHOD OF TREATING ULCERS OF THE LEG.

I WAS very interested in Dr. Pernet's paper (p. 463), as I have for some time past been carrying out a modified form of Unna's treatment.

When I was in South Shields Hospital we added, at Dr. Hunter's suggestion, some charcoal to the paste we were then using. This addition causes the paste, or "splosh," to be of a porous nature, and the occluded oxygen helps to keep the ulcer sweet.

Formula.

Charcoal	18 parts
Zinc oxide	6 ,,
Boric acid	6 ,,
Gelatine	16 ,,
Glycerine	20 ,,
Water	50 ,,

Soak gelatine and portion of glycerine and water for twelve hours. Make paste with all remainder. Mix together and heat on water-bath, stirring. Pour into shallow vessel.

The method of using also varies. A carbolic (resin) bandage is wound tightly round the leg covering the ulcer, and going a handbreadth above and below it. The "splosh" is painted well over the site of the ulcer. If much discharge is feared, it may be dabbed with cotton-wool.

An ordinary bandage is wound round all. If the ulcer is much punched out, I have been in the habit of putting a small piece of the carbolic bandage, cut to size, on its bed. This avoids leaving a space in which pus might gather, which I take it is the object of the flattening of the edge Dr. Pernet describes.

To begin with, I generally order boric fomentation for a week or so to clean the ulcer, or if it tends to be sluggish I find red lotion helps. At first the paste is left on for a week; later, when healing well, it can be left a fortnight.

The waxy nature of the bandage prevents it adhering and tearing off the epithelium. The method has not only been the means of much saving of time and labour, but many ulcers of years' duration have quite healed up, and that usually while the patients were on their feet.

It is advisable in chronic cases which have healed to bandage the leg firmly for a considerable period to prevent recurrence. If ulcers are recent (and not haemorrhagic) simple dressing, venous congestion combined with rest in bed, appears to me to be the quickest method of obtaining healing.

Lambeth Workhouse. HUGH BARR, M.B., Ch.B.Glas.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CHRISTCHURCH HOSPITAL, NEW ZEALAND.

PERFORATION OF INTESTINE BY PLUM STONE.

(By P. CLENNELL FENWICK, M.D.(N.Z.), F.R.C.S.Ed., Honorary Surgeon to the Hospital.)

H., a very fat woman, aged 38, was admitted under my care on February 8th.

On admission she was in a state of semi-collapse, cyanosed, with feeble pulse (144), subnormal temperature, and cold, clammy skin. She was quite conscious, and gave her history clearly.

History of Illness.

She had been in good health until February 5th, when she had severe pain in the lower part of the abdomen, and vomited. The bowels were not opened on this day, and remained unopened till admission. The vomiting returned on February 6th and continued till the day of admission. The vomit was foul-smelling, yellow, but not distinctly faecal in character.

Condition on Admission.

The abdomen was not markedly distended; it was soft, and palpation was painful. A large area of hardness was felt, chiefly on the right side. There was no sign of fluid in the abdomen. The patient was so fat (weight 15 st.) that examination was difficult. The rectum was empty. Vaginal examination, which was painful, was negative.

Operation.

As the patient was not then in a condition to undergo operation, I decided after consultation to wait for a few hours to see if she would rally. At 9 p.m. she had rallied enough to bear an anaesthetic, and I opened the abdomen. A great quantity of most foul-smelling pus escaped, and I found intense peritonitis of all the small intestine. The coils were matted together, and in some parts were black and lustreless. I could not find the appendix, and, not wishing to delay, I put a Paul's tube into one coil of the intestine, which seemed less inflamed than most of the rest, and drained by a tube pushed down into the pouch of Douglas. The patient died some hours later.

Necropsy.

On *post-mortem* examination by Dr. Crooke, R.M.O., a condition of extremely severe peritonitis was revealed. The entire small intestine shared in the inflammation. In parts the gut was almost gangrenous. The large intestine was normal but very distended; the appendix was normal. Twelve inches above the anus a gangrenous patch was found measuring about 2 in. by 4 in. In the centre of this area was a perforation which admitted the tip of the finger, and lying in the gut just underneath the perforation was a large plum stone.

REMARKS.

Neither my colleague, Dr. Nedwill, jun., nor I had met with a similar case, the perforation being so near the anus that it seemed curious that the stone had not been passed in the ordinary way after having travelled so far.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Surgery.

Friday, March 19th, 1909.

Mr. E. H. Taylor in the Chair.

A New Voice Machine.

Mr. R. H. Woods exhibited a patient fitted with a new apparatus for voice production. Owing to the discovery of an extensive squamous carcinoma, the whole larynx had been extirpated. The trachea was sutured to the skin, and the sac of the pharynx completely cut off from communication with the respiratory tract. Thinking how to enable the patient to speak, it occurred to the speaker to try to convert the sound made by a reed into speech. Accordingly, he fixed a reed in a tube. By putting it into the nose and dropping it over the soft palate, and by putting the other end into the trachea the patient was able to blow and make the reed vibrate. A valve was used to take in the air, and when he had his chest full he put his finger to the end, and the air was pressed into the tube. The method of inserting the appliance was then shown, and the patient, after a salutation to the section, counted from one to ten.

Mr. Dempsey said the case showed the results that could be obtained in laryngectomies when the pharynx was cut off from the respiratory tract. The real success of such a case was due to the avoidance of the danger of pneumonia, which killed 9 out of 10 patients formerly. Professor Gluck had performed 21 complete laryngectomies in the past year or two, and had not had a single death. It was too soon, however, to judge of the question of recurrence.

Mr. W. L. Murphy suggested the trying of a smaller tube.

The Chairman said he was much struck with the comparative ease with which Mr. Woods was able to close the pharyngeal tube.

The Secretary inquired as to the effect of the operation on the man's hope of life. Horses which were tracheotomized improved for a time, but after a while went rapidly to the bad.

Mr. Stokes asked if the patient could cough.

Mr. Woods, in reply, said there was no trouble in getting a pharyngeal wall; even after the larynx was taken away there was plenty of wall to complete a very good tube. Before doing the extirpation he thought it wise to give the patient an antistreptococcus vaccine so as to raise his opsonic index, and his temperature only rose to 100° for two days and then fell to normal. This was, under the circumstances, remarkable, and he thought some of the credit was due to the preliminary vaccination. The tube was sufficiently small to pass through the nose, and a smaller one would require a smaller reed, which would give less power to the voice. He had had a case of tracheotomy about fifteen years ago, and the man was in the best of health though still wearing a tube. The man before them could make a respiratory effort capable of clearing off any secretion in his windpipe. He was fed after the operation by a tube through his nose. This was kept up until he was able to swallow, about ten days afterwards.

Hydronephrosis and Appendicitis.

Mr. E. H. Taylor exhibited an ectopic hydronephrotic kidney removed from a young woman about a fortnight before. The clinical symptoms were strongly indicative of appendicitis. On palpation over her right iliac fossa he was able to determine deep fluctuation, and as she appeared to be very ill he decided to operate that evening, and to cut down over the fluctuating area with local anaesthesia. He was surprised to reach the parietal peritoneum without any evidence of pus. When he opened it his finger passed over a surface that was bigger than a normal caecum, and he thought it might be an ovarian cyst with a twisted pedicle. He extended the incision under chloroform, but found no pedicle. He punctured a large swelling which was fluctuating and tense, and a quantity of fluid escaped. The tissue at the edge of the opening was evidently renal. He put a tube into the kidney and drained the hydronephrosis, and after ten days removed the kidney, having previously satisfied himself that the left kidney was healthy. The case showed that even where all typical features of appendicitis were present, they might be dealing with a case that had nothing whatever to say to either the caecum or appendix.

Dr. Peacocke said he saw the girl only three days before he sent her into hospital, and he never was more positive in his life that he was dealing with appendicitis. He had great hopes, from past experience, that the girl would live a long life with only one kidney.

The Secretary said the frequency with which appendicitis was met with made them tend to come to the conclusion that most right-side pains were due to it; but he had seen a fair number of cases which proved to be otherwise. He had operated on somewhat similar cases as regards the pathological findings, though the symptoms were not the same. In one case there were oxalate of lime stones, which had probably excited a considerable amount of inflammatory reaction, and led to narrowing of the ureter.

Mr. Taylor, in reply, said the strength of novocain used in Berne was 1 tabloid dissolved in 10 c.cm. of sterile water. He had used it approximately at that strength, but often weaker. When getting down through the muscles towards the parietal peritoneum he always injected freely, and tried to produce oedema of the extra-peritoneal tissue. There was some pus mixed with the urine in the distended pelvis. After the operation the temperature rose to 100°, but the morning after the pain had gone, and the temperature fell to normal and remained so. The wound had practically healed, and the patient was perfectly well.

Glasgow Medico-Chirurgical Society.—At a meeting on March 19th, Dr. T. K. Monro, Vice-President, in the chair, Mr. Freeland Fergus showed a number of photographs of cases and a patient on whom he had performed his operation for *Ptosis*. The operation consisted in the resection of the tarsus and of excision of a large part of it, with the suturing of the remaining portion to the occipito-frontalis muscle. With this operation the patient had considerable power both of shutting and of opening the eyelid. He pointed out that the operations of Worth and Harman were essentially good, but that they ligatured the lid permanently open. The operation of Hess, although differing in principle from these operations, also permanently fixed the eyelid in an open position. Pagenstecher's operation was one which he considered should never be performed. Cicatricial contraction by the introduction of thread sutures could, in his opinion, only take place when the sutures were not perfectly sterile. Dr. W. S. Syme made a communication on some points in the surgery of the sphenoidal sinus, based on an examination of 155 adult skulls. The average distance from the anterior nasal spine of the maxilla to the opening of either sinus was $2\frac{1}{2}$ in., the extremes being $2\frac{1}{8}$ to $2\frac{3}{4}$ in. To the posterior wall the average on the right side was $3\frac{1}{8}$ in., and on the left $3\frac{1}{16}$ in., the extremes $2\frac{3}{4}$ to $3\frac{3}{4}$. In only one-sixth of the skulls was the posterior wall distant less than 3 in., and in none was the opening distant as much as 3 in. As a rule, the posterior ethmoidal cell did not extend beyond the anterior wall of the sphenoidal sinus. Well-marked osseous septa within the sinus were found in 13 cases. Suppuration in these cavities he considered was much more common than was generally supposed. Mr. J. Hogarth Pringle, in a paper on the treatment of *Fractures of the long bones*, advocated Bardenheur's method of extension by very heavy weights, sometimes as much as 35 lb., applied so as to correct lateral displacement and rotation as well as shortening.

Aberdeen Medico-Chirurgical Society.—At a meeting on March 4th, Dr. David Rennet, President, in the chair, the following were among the exhibits:—Mr. H. M. W. Gray: A case of chronic obliterative *Lymphangitis* of right leg, which had come into hospital for amputation owing to the pain and distress caused by the swelling of the leg. Sampson Handley's operation was done, the strands of silk being passed subcutaneously from the ankle to above the knee by means of a Babcock's vein extractor. Great relief had followed and almost entire disappearance

of the swelling, though the patient had not so far used the leg very much. As organisms are frequently found in the fluid in these cases, and as the operation is liable to be followed by inflammation, injections of streptococci and staphylococci was done before operation, and no inflammation had followed. Mr. Gray also showed a case after operation for traumatic deformity of foot, and a case of tumour of lower jaw, probably gumma. Dr. GEORGE ROSE: A number of cases of *Congenital dislocation of the hip* in patients of various ages treated by Lorenz's method, where very good results had been obtained. Dr. ASHLEY MACKINTOSH: A case of *Ulnar paralysis*, purely motor and probably traumatic; also a case in which the probable diagnosis was early stage of myasthenia gravis. Dr. HENRY PETERKIN: A case of *Rodent ulcer* inside the external auditory canal; he could find no record of a tumour of this nature in this region. Mr. J. SCOTT RIDDELL: (1) A case of *Double talipes equino varus*, apparently congenital. The left foot had been operated on with excellent result. Patient had now returned to have the other foot done. (2) A case of extensive *Necrosis of lower jaw*, with the sequestra which had been removed. (3) A case of *Caries of cervical vertebrae*, with a peculiar dislocation forwards of the atlas on the axis; there were no pressure symptoms then, and, after being in hospital for treatment from March, 1908, till June, he resumed his occupation as a clerk. In November he had a fall in the street and had to be carried home, and was admitted to hospital three weeks later with almost complete loss of power in his limbs; cranial nerves and sensation unaffected. He could with difficulty lift his arm as high as the shoulder, and his grip was very feeble. He could move his legs about when in bed, but could not stand or walk. Knee-jerks *plus* ankle-clonus present, and slight sluggish Babinski. There were marked arm-jerks and wrist-jerks; sphincter control unaffected. No reaction of degeneration was found, but responses of right arm were feebler than those of left. The patient slowly recovered, and had now almost full control of limbs. (4) A patient who, after a difficult labour in November, developed *Pneumonia*, and later a tumour was discovered in the right flank apparently connected with the uterus, though exactly how could not be determined. She had considerable pain and tenderness in the region of the tumour, which was about the size of a large cocoa-nut and of indefinite outline. Percussion over it was dull, and liver dullness was continuous with it, but the note between the tumour and the pelvis was distinctly tympanitic. A sort of pedicle could be felt running down from the tumour into the pelvis. Temperature and pulse were high at first, but came down as the chest condition improved. Blood count after pneumonia had cleared up was: white cells 12,000, with 79 per cent. polymorphs. Urine normal in quantity, acid, trace of pus; no vomiting, slight constipation, no vaginal discharge. On January 16th abdominal section was done, and it was found that the uterus, along with right ovary and tube and appendix, were fixed in one mass to the under surface of the liver and the abdominal wall, and all were in a state of suppuration. Hysterectomy, salpingo-oöphorectomy, and appendicectomy were performed; the wound was drained, and the patient was shown with the wound practically healed and in good condition.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—At a meeting on March 17th, Dr. P. BOOBBYER, President, in the chair, Dr. A. STANLEY GREEN (Lincoln) showed a series of lantern slides and photographic prints illustrating the value of *Roentgen examination* in some conditions of diseased bone. Amongst the examples shown were instances of osteitis due to injury, tubercle, syphilis, etc., besides Charcot's disease of the joints, rachitic changes, and several cases of sarcoma in close relation to bones. A most instructive case was related and illustrated, in which an examination of the foot by Roentgen rays showed the scaphoid bone to be the seat of two abscesses. Guided by this, the surgeon was able to reach both abscesses through a single opening drilled in the bone without implicating in any way the neighbouring joints. Dr. R. P. PURVES (Lincoln), in a paper on cases of *Gall stones*, described one in which 273 stones were removed by him at an operation; the gall bladder was of an hour-glass shape as the result of omental adhesions. This patient always seemed better when following Dr. Haig's diet, and relapsed if it was not adhered to. In a second case four large stones were found in the common duct, but jaundice only appeared at quite a late stage, three weeks before operation. A third case illustrated the fact that gall stones gave rise to indigestion and vague pains after meals. Besides jaundice and tenderness, there were referred pains and marked wasting in this case. At the operation, the hepatic, cystic, and common ducts were all full of stones. A fourth case, in a man of 50, with a history extending over several years, was specially interesting as haematemesis occurred after the operation and retinal haemorrhages. Despite these complications he recovered. In discussing this haematemesis the author argued that its real cause was almost certainly of an infective, septic nature. In reply to the discussion, Dr. Purves laid stress on pain referred to the post-hepatic region in gall-stone cases. It was distinguished from that of lumbago by being confined to this level on the right side.

CLINICAL SOCIETY OF MANCHESTER.—At a meeting on March 16th, Dr. J. J. COX, President, in the Chair, Dr. P. R. COOPER reported a case of *Eclamptic coma* occurring three weeks after delivery, and cured by lumbar puncture. The patient was seen in her first pregnancy. Albumen was found in the urine at the sixth month; she had eclamptic seizures at full term, and was delivered of a living male child, after which the fits ceased, and the albuminuria disappeared. The second pregnancy terminated at seven months, and she was delivered of a stillborn child. No albuminuria and no fits. Nine days after the patient had some paresis, and her mental condition was not quite clear. Three weeks after confinement she came downstairs, when she vomited and became drowsy. Later albuminuria set in, and she became comatose. There was no improvement in spite of the usual treatment. Lumbar puncture was performed, 2 to 3 drachms of cerebro-spinal fluid being drawn off, and saline injected under the breasts. Two days later lumbar puncture was repeated, and further 2 to 3 drachms of cerebro-spinal fluid withdrawn. After this the fits ceased, and the patient made a gradual recovery. Dr. REYNOLDS, in some observations on the diagnosis and treatment of *Migraine*, drew particular attention to the less common varieties of aurae that might precede the typical headaches. Numbness and tingling in the fingers occurred not infrequently. Transient paralysis of the muscles supplied by the third nerve was a rare form described by Charcot, and a case was cited illustrating this variety. As regards treatment, the synthetic drugs were of paramount importance, antipyrin was usually the most valuable, but some patients responded better to phenacetin, aspirin, or pyramidin. The drugs must be exhibited early in the attack to be efficacious.

MANCHESTER PATHOLOGICAL SOCIETY.—At a meeting on March 10th, Dr. MILLIGAN, President, in the chair, Dr. WILKINSON described a case of *Acute Hodgkin's disease*. The patient was a man, aged 28. The illness began early in September with fever, some vomiting and diarrhoea, and slight delirium. After four weeks he had recovered sufficiently to go away for a holiday, but a week later the illness recurred with more severe symptoms and enlargement of the glands of the neck. There was marked anaemia. He spent the last week of his life in the Manchester Royal Infirmary—December 15th to 22nd—in a typhoid state; continuous temperature, 101° to 103.4°; pulse, 120 to 150; respirations, 40 to 50; chain of glands behind sterno-mastoid and glands under lower jaw enlarged on both sides, spleen and liver palpable, some abdominal discomfort and diarrhoea. Widal reaction negative. Blood-count: reds, 4,432,000; whites, 8,000; haemoglobin, 58 per cent.; marked polychromatophilia. The *post-mortem* appearances were described by Professor Lorrain Smith. The case showed a moderately soft and partly necrotic tissue replacing the lymph glands, affecting (*a*) the coeliac group, and forming a large tumour-like mass in and behind the smaller curvature of the stomach; (*b*) the glands along the aorta throughout its entire length; (*c*) the glands of the neck; and (*d*) the glands of the groin. The enlargement of the coeliac glands was the most conspicuous change. There

was very slight enlargement of the mesenteric glands. The liver was studded with minute white rounded masses of tissue of the diameter of a small pea. Amongst these were a number of larger masses up to the size of a walnut, and one or two of them showed umbilication. The white tissue formed in definite masses closely simulating deposits of malignant new growth. The spleen was moderately enlarged, and studded with large nodules closely resembling tumours of secondary origin. The lungs, heart, kidneys, stomach, and intestine were not affected. The microscopical examination of the new tissue showed the characteristic proliferation of large endothelial cells, but there were very few giant cells and eosinophile cells. Dr. EUGENE YONGE, in a paper on the association of *Deformities of the jaws* with nasal obstruction in children, referred to some of the difficulties in connexion with the usual theory that mouth-breathing, due generally to the presence of adenoids, was the cause of the deformities. Dr. R. W. MARSDEN mentioned 2 cases of *Calcareous degeneration* of the middle coats of the medium-sized arteries. In both instances the degeneration had reached a high degree, the men being of the poorer class, aged 49 and 67 years, and suffering from pulmonary tuberculosis. Attention was drawn to the distribution of the disease, the arteries of the limbs being chiefly affected. In one case the small vessels of the hands and feet were healthy, but in the other both palmar and plantar arches were affected. In both cases the cerebral vessels were practically free from degeneration. The author suggested that the particular form of the toxin producing the affection might play an important part in the peculiarity of distribution.

LIVERPOOL MEDICAL INSTITUTION.—At a clinical meeting on March 25th, Mr. BICKERTON, President, in the chair, the following were among the exhibits: Dr. STOPFORD TAYLOR and Dr. R. W. MACKENNA: (1) Favus affecting the thighs and legs of a steward from an emigrant ship—the scalp and other parts of the body were free; (2) rodent ulcer treated successfully with zinc ions; (3) psoriasis of the face occurring in women; (4) psoriasis in a man accompanied by sycosis; (5) dermatitis following the use of a proprietary ointment; (6) wax casts modelled from their own cases, illustrating the cutaneous lesions of syphilis. Dr. LOGAN: A case of *Bilateral asymmetry*, which he regarded as hypertrophy of the whole of the right side. The child was 15 months old, and the difference had been noticed since birth. During the last five months the right limbs had grown more than the left, but the head had become more symmetrical. Dr. C. E. P. FORSYTH read a note on the presence of *Tubercle bacilli in the blood* in tuberculosis. The blood of twelve patients was examined. Ten of these were undoubted cases of pulmonary tuberculosis, and in all the organism was found in the blood. The blood was drawn from a vein in the arm. In one case phagocytosis was noticed, and only in one was there any evidence of mixed infection. None of the cases were rapidly progressing cases, or cases of general tuberculosis. Of the two cases in which no bacilli were found, one was probably not tuberculous, and the other had physical signs of phthisis, but no bacilli in the sputum. These cases went far to confirm Rosenberger's observations—for example, as to the use of vaccine therapy in this disease. Dr. HENRY CLARKE read a note on three years' experience in *The use of tuberculin*. His conclusions were: (1) That tuberculin was best administered by the German intensive method, the dose being given at short intervals of one to two days, and rapidly increasing up to 1 to 2 c.cm. of the original solution; (2) that doses given by the mouth had the same effect as when given subcutaneously; (3) that the temperature and clinical conditions were as delicate a guide to treatment as the opsonic index; (4) that new tuberculin (bacillus emulsion) was the most effective preparation; (5) that it should be prepared from human bacilli in dealing with disease produced by these bacilli; (6) to determine the variety of bacillus he recommended von Pirquet's cutaneous reaction; (7) he considered tuberculin a useful drug but not a substitute for good food and fresh air. Dr. HILL ABRAM referred to a case which he reported ten years ago which completely recovered under treatment with tuberculin TR; subsequent experience, however, had not confirmed him in its use. He did not consider that inoculation experiments had established a vital distinction between the bovine and human varieties of tubercle bacilli. He advocated a further trial of tuberculin treatment on the German intensive lines.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—At a meeting in Newcastle, on March 11th, the following were among the exhibits:—Dr. DAVID DRUMMOND: (1) A typical case of *Acromegaly* in a coalminer aged 40. Up to 19 years of age he was quite normal, and since the age of 21 he has observed comparatively little change. He suffered from headache, but was without vomiting or visual defect. There was no sugar in the urine. (2) A male child, aged 7, who had a *Chronically-distended bladder*, which occupied the greater part of his abdomen. Dr. R. A. BOLAM: A case of *Lupus erythematosus* of face and hands complicated by psoriasis. Dr. BEATTIE: A case of *Osteo-arthritis* due to the gonococcus, the infection dating back nine years. There was a typical osteo-arthritis of the knee-joint. Mr. H. B. ANGUS: (1) A man after recent removal of the scapula for sarcoma. The operation left the acromion and coracoid processes, which he thought was an improvement. (2) A patient with an old fracture of the femur with an unreduced sciatic *Dislocation of the hip-joint*. An attempt was made to reduce it three months later, but the bone was again broken. An open operation was carried out, but it was found to be impossible to reduce the dislocation so that the head of the femur was removed. Mr. W. E. HUME: (1) A *Cretin*, aged 16, who presented the appearance of an infant of 2 years. The administration of thyroid extract improved it as regards its limited intelligence and the condition of the skin. Mr. JOHN CLAY: Specimens of excised gall bladders. He took a very moderate view of the operation of *Cholecystectomy* and thought the main indication was a gall bladder which had a stone impacted in the duct with the presence of clear mucus. He also urged the importance of not removing the gall bladder if there was any chance of a permanent obstruction of the common bile duct. Mr. A. M. MARTIN: A case in which a *Splenectomy* had been performed for wandering spleen. Mr. N. G. RICHARDSON read a paper on post operative tetanus.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.—At a meeting held at Sheffield on March 19th, Dr. J. W. MARTIN (Sheffield), President, in the chair, the following were among the exhibits and communications: Dr. A. J. WALLACE (Liverpool) showed a glass *Vaginal nozzle* which he had removed from the bladder by the vaginal route. The nozzle was 5¾ in. in length and ⅝ in. in diameter. It had slipped into the bladder, seven weeks previously, during the process of vulval douching, by a nurse, of a recently confined woman. Mr. ARTHUR CONNELL (Sheffield): A case of complete *Torsion of the internal genitalia* with a large interstitial fibroid. The patient, a spinster of 50, had suffered, on several occasions during the previous five weeks, from subacute attacks of abdominal pain and vomiting, which had always commenced during defaecation. Her medical attendant had found an abdominal tumour of about the size of a six months pregnant uterus. The last attack was the most severe, and had lasted three days when Mr. Connell first saw her. She was then desperately ill. He diagnosed a fibroid with torsion of its pedicle, and advised immediate operation. The uterus and its appendages were rapidly removed, after preliminary enucleation of the large interstitial myoma. The uterine and ovarian vessels were thrombosed, and did not require ligaturing. The patient made a good recovery, though a transient hemiplegia commenced on the day after operation. The cavity of the uterus was distended with blood clot, and the uterus, with its appendages, and the tumour were in a state of infarction. Dr. A. CUFF (Sheffield): Specimen from a case of bilateral malignant *Papillary cysto-adenoma* of the ovaries. There was considerable ascites, and the peritoneum was studded with papillary growths. Three months after operation there were no signs of recurrence. Dr. J. E. GEMMELL (Liverpool), in a

short paper on fibro-myoma uteri as a cause of *Puerperal toxaemia*, related 3 cases which illustrated different methods of puerperal infection dependent upon such growths: (1) Strangulation of the pedicle, leading to sloughing and general septic peritonitis; (2) toxaemia from necrosis of the growth itself; (3) sapraemic infection from the placental side, together with necrosis of the growth. The first 2 cases were successfully treated by subtotal hysterectomy. In the third case a sloughing submucous fibroid was removed piecemeal on the sixth day of the puerperium. Immediate improvement followed, but death, from pulmonary embolism, occurred a few days later. He advocated, in the absence of symptoms of toxaemia, that the tumour should be left until involution is completed, and then dealt with by any operative method which is deemed most suitable; but when toxaemia arises, from any cause whatever, complete or subtotal hysterectomy is the operation of choice, and the safest.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—At a meeting on March 10th, Dr. SOLLY (President), in the chair, Dr. MANTLE (Harrogate), reopening the discussion on *Intestinal lavage*, Plombières system, said there must be no underrating the diagnostic value of mucus in the stools; mucus normally secreted was invisibly mixed with the faeces. In colitis nervous manifestations were usually striking, but how much as a result and how much as a cause was difficult to say. With the disturbed nervous system there was an unbalanced circulation—hence a condition favourable to congestion of the whole alimentary canal. This explained the frequency of gastric symptoms. There could be no doubt as to the value of intestinal lavage in colitis. Combined with the immersion bath, which reopened the peripheral circulation, the results were brilliant. Mr. LOCKHART MUMMERY said there were many cases of chronic colitis unimproved by lavage or medical treatment. In most of these there was some obstructive or other lesion in the colon which must be removed. A careful examination aided by sigmoidoscopy should be made in all cases of chronic colitis. Appendicostomy gave excellent results in suitable cases, and was much to be preferred to caecostomy, but correct diagnosis was the first essential, and the indiscriminate performance of any single operation was to be deprecated. Dr. FORTESCUE FOX said that serious disorders of the colon were quite exceptional in health resort practice, whilst conditions of constipation with more or less colon irritation were extremely common. The term "muco-membranous colitis" applied to such cases was a misnomer. There was sometimes a deficiency of mucus in the colon (as in the pharynx), and membranes were seldom met with. He had employed lavage in those cases for many years, combined with diet, baths, and exercise. Dr. PARKES WEBER thought that delayed circulation in the bowel, connected with want of exercise and constipation, played a very important part in the commencement of chronic colitis. Treatment in early stages by regular open-air exercise, abdominal massage, and the use of Zander's mechanotherapy was what was chiefly required. Dr. LEONARD WILLIAMS deprecated the newborn enthusiasm for the Plombières douche at the British health resorts. Colitis was not a new disease, nor was the Plombières douche a new method of treatment. It offered no advantages over an enema properly applied. Mr. PENDLEBURY discussed the surgical points raised by Mr. Mummery. Dr. PRESTON KING (Bath) pleaded for moderation in the use of Plombières lavage. Dr. HERTZ said that constipation, whether produced by neurasthenia, chronic appendicitis, or weak abdominal muscles, which made defaecation inefficient in visceroptosis, was the chief cause of colitis. Treatment consisted in keeping the bowels empty. Diet, exercises, and drugs generally sufficed; sometimes enemata, and especially the Plombières douche, were required. Appendicostomy was never indicated, as the faecal delay was always in the periphery, so that injections were more effective through the anus than through the appendix. Dr. PAGAN LOWE (Bath) considered that colitis, like appendicitis and neuritis, was a product of influenza, and could usually be treated satisfactorily without intestinal lavage. Dr. REBOUL, of Châtel Guyon, and Dr. BERGOUIGNAN, of Evian, described the treatment as carried out in those resorts. Dr. BUCKLEY, who first introduced the discussion, and Dr. MANTLE both replied.

Reviews.

DEEP ANAESTHESIA IN TABES.

PROFESSOR GRASSET, of Montpellier, has published in a small book a series of lectures delivered early in 1908.[1] It is mainly devoted to the consideration of the various forms of deep anaesthesia or deep disturbances of sensation that may occur in tabes dorsalis, and to contrasting them with the better-known superficial disorders of sensation commonly held to be so characteristic of that disease. Deep anaesthesia of the rectum and bladder, and diminution of the sensitiveness of those viscera to distension, have long been recognized in tabes, while Déjerine and others have observed anaesthesia of the vagina and of the os uteri during parturition in tabetic women; but the careful study of such deep anaesthesia was first undertaken methodically by Pitres, of Bordeaux, and has done much to enlarge the semeiology of tabes. Anaesthesia of the testis on pressure is present in about half the cases, and partial anaesthesia in more than half the remainder; an analogous insensitiveness of the breast is often present in tabetic women. Anaesthesia of the epigastrium—the pit of the stomach—on sudden pressure, without loss of the abdominal reflex and without any corresponding cutaneous anaesthesia, has been observed in over 40 per cent. of the cases of tabes examined, and is attributed by Déjerine to pressure-anaesthesia of the solar plexus. Analgesia of the trachea when that organ is pressed backwards in the middle line by a finger, or of the eyeball when it is compressed through the eyelid (deep anaesthesia), or of the cornea and sclerotic to the touch (superficial anaesthesia), or of the tongue to pinching between the finger and thumb, or of superficial nerve trunks to pressure, may all occur in tabetic patients in a percentage as high as 50. Grasset lays particular stress on the analgesia to pressure noted in the tendons of tabetics, first noted by Abadie in 1905. This anaesthesia can be tested in any tendon that can be pinched between the finger and thumb, and is present to a greater or less extent in 80 per cent. of tabetic patients; it is one of the early symptoms of tabes. Analgesia of the bones on percussion, quite apart from superficial anaesthesia of the skin over them, is often found in tabes, and is further brought into evidence by the painless nature of the spontaneous fractures met with in tabetics. Analgesia of the heart is often a striking feature in patients with tabes who are the victims of morbus cordis as well, as frequently happens. The analgesia causes the heart trouble to lie latent until it is accidentally discovered when a physical examination of the patient is made; this is all the more striking, because the lesion common in tabetics is aortic, and aortic disease is so very frequently associated with severe precordial or other pains. Grasset remarks that loss of reflexes and deep anaesthesia of the tendons do not go hand in hand, and discusses at some length the connexion between deep sensations (from the tendons, muscles, etc.), and "muscular sense" and the sense of orientation. He next considers what part of the nervous system it is that controls the deep sensation that is disordered in tabes, and concludes that it is the sympathetic—or rather the vago-sympathetic—nervous system. He does not believe in the division of the whole nervous system into two distinct parts, one the cerebro-spinal, the other the sympathetic, but holds that the sympathetic nervous system is a mixed cerebro-spinal nerve just as much as any other nerve is. He quotes a number of recent writers who have found microscopical changes—atrophy of myelinated fibres leading from the sympathetic ganglia into the posterior nerve-roots of the cord—in the sympathetic system of tabetic patients, and discusses the constitution of the vago-sympathetic chain and its functions.

In conclusion, he repeats that certain cases of tabes dorsalis exist in which many of the classical signs and symptoms of the disease may be absent, while various of the deep anaesthesias mentioned above are present, and make the diagnosis certain. The object of his book is to draw attention to these deep anaesthesias, and it may be warmly recommended to the notice of all neurologists.

[1] *Le Tabes, Maladie de la Sensibilité Profonde.* Travaux et Mémoires de Montpellier. Série Scientifique V. By Professor J. Grasset. Montpellier: Coulet et Fils. 1909. (Med. 8vo, pp. 124.)

ARTERIO-SCLEROSIS.

The treatise on arterio-sclerosis, by Dr. O. Josué,[2] is published at an opportune time, as the subject is one to which considerable attention is being given. The book has a preface by Professor Roger, who speaks of it and of the work of its author in the highest terms. Dr. Josué is known as an experimenter who claims to have produced lesions exactly similar to atheroma of the aorta in rabbits by intravenous injections of adrenalin. He did not succeed in obtaining the same results by hypodermic injections or by injecting the solution into the nares, and negative results followed also the intraperitoneal injections by Erb and intramuscular injections by Kulbs; the latter, however, succeeded with injections into the trachea. The rapidity with which these results were produced is somewhat remarkable. The duration of the author's cases was about five weeks, Erb's twenty days, Kulbs's ten days. Similar results have been obtained by the injection of other substances, such as methylaminoketone (Sturli), pyrocatechine (Gouget), and, although not mentioned in this book, Adami of Montreal has produced similar lesions by swinging rabbits by their hind legs! Josué answers the objection that spontaneous atheroma is common in rabbits by stating that he only found it once in "a considerable number" of examinations, that Secard did not find it at all in 250, and that Gouget estimates its occurrence as at most 3.7 per cent. He does not accept the ordinary view that the lesion is caused by the hypertension produced by the action of adrenalin on the arterioles. He prefers to believe that it is caused by a specific action on the arterial walls, as J. Teissier and L. Thévenot found that the addition of choline which neutralizes the hypertensive action of adrenalin did not prevent the appearance of the atheromatous lesions. The results of these experiments led him to look to the adrenals as the cause of arterio-sclerosis (which he regards as identical with atheroma), and he claims to have found that the cortex of these bodies is generally hyperplastic in these cases, and although he admits that the medulla rather than the cortex secretes adrenalin he alleges that the cortex also contains a hypertensive substance. It would seem that as he had previously rejected hypertension as a cause of the arterial changes it would have been more to the point to have shown that it contains a substance which has a specific effect upon arterial walls. He relates the results of experiments with many other substances to produce lesions of the aorta, for example, nicotine which gave him negative results, though others have found the opposite, with lead, extract of putrefied meat and red pepper his results were positive, with alcohol negative, with acids, phloridzin, iodide of potassium and sodium, digitaline, ergotine, and several other drugs, microbes and toxins positive, in fact the successful results seem to have been so common as to diminish their value and we hesitate before accepting them as conclusive.

The experimental is after all only a portion of Dr. Josué's book. He gives an excellent and detailed account of the histological changes and of the symptoms associated with arterial disease as well as of the principles of treatment and the remedies now generally in use. The illustrations are good, and by modern methods of staining he is able to demonstrate clearly the presence of fat droplets in the coats of the thickened arterioles. He considers arterio-sclerotic changes to be degenerative, not inflammatory. He enters into an interesting discussion of the relation of arterio-sclerosis to interstitial nephritis, based upon the examination of twenty-three cases, and concludes that there is no strict correspondence between the alterations of the great and medium sized arteries of the kidney and the amount and distribution of the renal disease, but, on the other hand, he finds a close relation between the renal lesion and fatty degeneration of the walls of the arterioles and capillaries of the kidney substance. He describes the changes in the blood vessels in a great many organs, and it appears to us that he to some extent confounds cases in which the changes in the vascular walls are shared with the tissues around and due to a common cause with those in which the arterial change is primary. Of course, it is difficult to distinguish between them, but the author is predisposed to see primary arterial disease everywhere. This is much the same as the mistake made by Gull and Sutton, who in their illustrations of arterio-capillary fibrosis showed vessels from all sorts of inflammatory patches where the ordinary interpretation would be that the walls of a vessel shared in a change which was common to all the connective tissue in the neighbourhood.

Dr. Josué does not share the distrust of the Riva-Rocci sphygmomanometer entertained by some clinicians, but he proposes the adoption of a somewhat complicated formula instead of taking the simple readings of the height of the systolic pressure.

The book is no mere compilation, and will be read with interest by all who are paying attention to this subject.

[2] *Traité de l'Artério-Sclérose.* Par le Docteur O. Josué. Preface de M. le Professeur Roger. Paris: J. B. Baillière et Fils. 1909 (Demy 8vo, pp. 416; figures 20. Fr. 10.)

SEXUAL PSYCHOLOGY.

The Sexual Life of Our Time,[3] by Dr. Bloch, of Berlin, ran, we are told, into a sixth edition within nine months of its first publication in Germany, so that Dr. Eden Paul had some justification for making a translation into English. Dr. Bloch has spared nothing in approaching his professed aim, which was:

> To write a complete encyclopaedia of the sexual sciences based upon my own experiences and observations, and embodying the definite opinions I have formed regarding all the important principles involved. I have written this book for all earnest men and women who wish to form well-grounded views regarding the problems of sex and to enlighten themselves concerning the results of the multiform researches in this province of thought. The immense importance alike to the individual, to the State, and to human society at large of a truly critical knowledge of the relationships of the sexual life is a matter upon which I repeatedly insist in the following volume.

This appeal to all earnest men and women was re-echoed in England by the translator in the following words: "It must be clearly understood that this is a work belonging to the category of 'adult literature.'" With this reservation we may commend the book, which appeals especially to members of the learned professions, medical, legal, and clerical, and next, perhaps, to responsible persons engaged in the instruction of youth, the final appeal of the work being to all those who hold that "the proper study of mankind is man." The sale of the volume being limited, as is customary with such works in this country, to members of the learned professions, it is likely that a much longer period than nine months will elapse before the birth of the sixth English edition. The treatise is a valuable addition to those especial shelves of the library of physiology and frenzy which are already groaning under the weight of Krafft-Ebing, Albert Eulenburg, Magnus Hirschfeld, Havelock Ellis, and other introspective philosophers. The language of the translation is well chosen, the type is excellently clear, and there is a complete and convenient index both of names and subjects.

Professor August Forel, formerly Director of the insane asylum at Zurich, is well known to English students of psychology, and especially of psychiatry, by his many works upon these subjects, several of which have been translated into English. His recent volume, *The Sexual Question*,[4] reflects credit upon the finesse of the adaptor, Dr. C. F. Marshall. It is thin ice, in connexion with which these sexual specialists call a skate a skate, and Dr. Forel himself proclaims serious difficulties for his Anglican adaptor:—

> In the domain with which we are concerned (says he) the French public are too much afraid, I think, of crudities and of calling things by their proper name. By veiled words and by indirect locution one may say anything, but I have decided not to employ such subterfuges in treating of such a vital social question with the seriousness that it requires. It seems that there is a fear of young people hearing the sexual question spoken of freely and openly; but it is not taken into account that in hiding these things under half-understood words one only excites their curiosity, and, owing to their being blindfolded, they are delivered into the snares and surprises of debauchery.

[3] *The Sexual Life of Our Time in its Relations to Modern Civilization* By Iwan Bloch, M.D., Physician for Diseases of the Skin and for Diseases of the Sexual System in Charlottenburg, Berlin, etc. Translated from the Sixth German Edition by Eden Paul, M.D. 1908. London: Rebman, Limited.

[4] *The Sexual Question.* A Scientific, Psychological, Hygienic, and Sociological Study for the Cultured Classes. By August Forel, M.D., Ph.D., LL.D., formerly Professor of Psychiatry at, and Director of, the Insane Asylum in Zurich (Switzerland). English adaptation by C. F. Marshall, M.D., F.R.C.S., late Assistant Surgeon to the Hospital for Diseases of the Skin, London. London: Rebman Limited.

We do not propose to offer a judgement as to whether or no a copious supply of plain-spoken pages upon sexuality is desirable as literature for adults and experts, but we feel inclined to protest against the pose of the author of *The Sexual Question* when he claims to be the instructor of youth. We are reminded of the lines of Horace:

Favete linguis. Carmina non prius audita
Virginibus puerisque canto.

For Dr. Forel in his preface insists upon quoting:

Among several others of the same kind a letter which I have received from a young girl aged 21 years, intelligent, virtuous, educated, and well brought up, but without restraint—

Of whom he says:

I begged her to criticize me without pity, for I wished above all things to be clear on the effect produced by my book.

The momentous verdict of this young lady is, by request, anonymous; it is also bizarre, and, we need scarcely say, in favour of the appellant, who records his satisfaction in the following phrase:

I think that the candour, the loyalty, and the maturity of judgement of the sentiments expressed by this young girl are of much more value and are much more healthy than all the prudishness and false shame of our conventional morality.

A work which professes to defy the fear of the French public "of crudities, and of calling things by their proper names," might almost be regarded as taboo in England—at any rate, for kindergarten use, and we are not yet satisfied that the suggestions of Dr. Forel that youth is to be taught to be surprised at nothing in the way of sexual phenomena are more valuable than the words we have before us of the Master of Trinity College, Cambridge, Dr. Butler, the great Head Master of Harrow School, who wrote:

"Precautions should be taken as far as possible to keep vicious or polluting literature out of young boys' ways. I include under this head, and have a reason for each entry, articles in medical or scientific dictionaries. . . . Those who make light of the danger of such books, those who misquote such passages of Scripture as 'To the pure all things are pure,' do not know what they are saying. It is a solemn duty not to put temptation in the way of the young.

Maxima debetur pueris reverentia."

It may be that some of our readers may share the opinion that works of this kind are more fitted for the top shelves of the library of an insane asylum than for the hands of an intelligent, virtuous young girl, aged 21 years.

Les Eunuques a Travers les Ages, by Dr. R. MILLANT, is issued by Vigot Frères, 23, Place de l'École de Médecine, Paris. This postal address in itself suggests that the work should be of scientific interest to the faculty. But, somewhat greedily, the publishers spread their net wide, and hint that the work should have its place in the library of the curious as well as in that of the man of science and the man of letters. It has become the custom of French publishers to supply with each copy of a book sent out for review a printed slip for the use of the reviewer suggesting and, in fact, supplying exactly the notice that the publishers would desire to read. This, too, with the heading *Prière d'insérer*. Now with all respect for a system which tends to promote the enterprise of the publisher and the proverbial indolence of the reviewer, we must protest against this system. An argument which will appeal to the publishers most strongly is that by adopting this method they run a grave risk of forfeiting the sympathy of even the most indolent of critics, who, in a spasm of indignant industry engendered by this suggested slight to his self-respect and independence of thought, is tempted to seek material for censure rather than adopt the laudatory inspiration with its preliminary *Prière d'insérer*. It was in a somewhat carping spirit of resentment at the masquerade of pornography in the guise of science that we perused *Les Eunuques*, which we find to be a reasonably complete treatise on the subject, more interesting, we hope, to the philosopher than to the curious. The author discusses the possible motives which can have induced so many races of mankind in so many ages to submit a proportion of their male population to this mutilation, but the discussion is not illuminating. Dr. Millant gives an interesting account of that strange sect of Russian origin, whose head quarters now seem to be in Roumania, the Skoptzys. These people make a virtue of emasculating their males, inspired by a strong religious motive in some obscure way associated with the fundamental principle of their faith, that the Messiah will appear among them as soon as their population has become sufficiently numerous. If the arrival of the Messiah is a consummation devoutly to be wished by the Skoptzys, and if that arrival is to be hastened by increasing the population, we marvel at their craze for castrating their most eligible males—seemingly a check upon population which might cause bones, even those of Malthus, to turn in their grave. The drastic code of the Skoptzys prescribes that the mutilation of males may take place in boyhood; but should any escape this fate and achieve the privileges of matrimony, there must hang over the temporarily happy home the dreaded shadow of the castrater who is to be called in after the second visit of the stork. For upon the birth of a second child a Skoptzy father must be added to the list. By proselytism, sometimes associated with bribery, also occasionally by violence, the Skoptzy castraters are kept fully occupied over this special work, and it is no uncommon occurrence—so we read—for an earnest Skoptzy to play the part of Shylock to an entire man with a view to exacting the physical penalty for financial default. We are not surprised to read of this strange sect, that they are thrifty, well-nourished and shrewd men of business, leading peaceful lives and amassing considerable fortunes, chiefly by horse-dealing and the letting of carriages. In the concluding passages of the book the author sums up the physiological changes following castration, laying especial stress on those observed in the bones, and briefly discusses the hypothesis of an internal testicular secretion. In this chapter lay the chance of the justification of the book as a treatise of service to medical readers; and we regret to find it is totally inadequate. To our mind the most wholesome passage in the book is an echo from Ovid: "La castration aurait dû être le châtiment de celui qui l'inventa."

NERVOUS DISEASES.

GOWERS has pointed out that tabes dorsalis does not always deserve the epithet of "progressive," formerly applied to this symptom complex, for arrest is frequent and considerable improvement not uncommon. Oppenheim says in the third edition of his textbook that it usually runs a course of ten to twenty years, but may last from twenty-five to thirty, and Marie goes so far as to say that tabes does not essentially shorten life. These opinions have led on more than one occasion to the discussion of the question whether this disease may not have undergone a change in character and be now more benign than formerly. As is indicated, however, in a pamphlet by Dr. VON MALAISÉ, dealing with the prognosis of tabes dorsalis,[5] it is probable that with the finer diagnosis of to-day, and particularly since the discovery of the Argyll Robertson pupil phenomenon, cases which would at one time have escaped detection are now included in a category which contained formerly only examples of the graver kind. Dr. von Malaisé, who at the time of the preparation of his monograph was assistant in the polyclinic of Professor Oppenheim, of Berlin, was enabled with the help of the Police Intelligence Department of Berlin to trace and examine ninety sufferers from tabes dorsalis who had formerly been patients of the polyclinic, and whose first examination dated back at least eight or ten years. Naturally, these patients, coming from the poorer classes, do not give results admitting of general application, for in tabes dorsalis, more than most diseases perhaps, the efficacy of treatment, and consequently the prognosis, depends very largely upon a favourable environment. Disregarding, therefore, Dr. von Malaisé's statistics, and only considering a few points of particular significance, we note that, in opposition to Gowers, the author finds that a rapid development of symptoms, and particularly an early appearance (that is, within six years) of symptoms after syphilitic infection, are of unfavourable augury. He agrees with Marie that the greater the variety of symptoms the worse the prognosis; but his results show only a partial agreement with the opinion of Collins that marked sympathetic nerve disorders are of bad omen, for he finds that cases with early and severe gastric

[5] *Die Prognose der Tabes Dorsalis*. By Dr. E. von Malaisé. Berlin: S. Karger. London: Williams and Norgate. 1906. (Demy 8vo. pp. 51. 1s.)

crises often undergo great improvement, thus supporting Benedikt's statement (Ueber Aetiologie, Prognose und Therapie der Tabes, *Wiener Med. Presse*, 1881, Hft. 1, 2, 4, and 5) that prodromal gastric crises and optic atrophy should be classed together from the prognostic standpoint as often marking the commencement of arrest. The author found that in those who showed optic atrophy it occurred in the preatactic stage in 73 per cent., and that in the great majority—that is, in three-quarters—arrest set in with visual failure. On the other hand, late appearing optic atrophy was not in any way related to the progress of the disease. On many points of importance Dr. Malaisé's material was too scanty to be of decisive value, but we may mention, finally, that in the large majority of cases running an unfavourable course the symptoms were first noted in the age period 22 to 36.

That Dr. PURVES STEWART'S *Diagnosis of Nervous Diseases* has met with the wide acceptance it deserves is proved by the fact that the second edition has now been published[6] although less than two years have elapsed since we reviewed the first. The new edition is considerably larger than the first. The extended table of contents has been omitted, but many new diagrams and illustrations have been added, and the whole subject matter, in a department which is continually undergoing revision and addition, has been brought carefully up to date. Professor Marie's views, about which so much has been written, on aphasia—according to which diagrammatic visual, auditory, and speech centres are denied, and aphasia referred to intellectual deficiency from disintegration of some part of Wernicke's zone—are compactly described and opposed. Under cranial nerves there are brief accounts of Bárány's aural or vestibular nystagmus; of "jaw winking" (lid opening in congenital ptosis during certain jaw movements—for example, in mastication), and Harman's explanation of the phenomenon; Mendel's view of the innervation of the orbicularis is discarded. Amongst the upper neurone palsies the differential points between the upper, cortico-spinal or supranuclear, and the lower or nuclear or infranuclear paralyses are most lucidly discussed, and in the lower neurone group many new illustrations—for example, of ischaemic paralysis, Landouzy-Déjerine myopathy, etc.—are introduced. The chapter on the cerebro-spinal fluid and lumbar puncture has been brought up to date; and, finally, two new chapters—one on sleep and the last on intracranial tumours—have been added. So far, we have mentioned only the facts of which the author treats. It remains to be said that he has the happy gift of giving the gist of a matter in a few pregnant sentences, and of seeing clearly what is wanted, and consequently of being singularly lucid in expression. We can warmly commend this book to our readers.

THE CHEMISTRY OF THE CARBOHYDRATES.

THE work Professor EMIL FISCHER has during recent years been performing on the proteins and polypeptides has no doubt overshadowed his untiring energies in other directions. To those in danger of forgetting Professor Fischer's services to biochemistry in relation to subjects other than the proteins, his thick volume of collected papers will come as a useful reminder.[7] It is convenient for workers on the same or allied subjects to have the published researches of any prolific worker under one cover, and this is the *raison d'être* of the present volume, as it was that of a similar volume issued a year or two ago on the proteins. To attempt even a superficial review of the great mass of information contained therein is an impossible task. It will be sufficient to remind readers that Fischer's work on the carbohydrates was pioneer and epoch-making, rendering clear their constitution, and making their synthesis an accomplished fact. Each paper is a brick in the edifice of this knowledge which was finally reared. The volume contains 109 papers, mostly by Fischer himself; a few emanate from his pupils, or were written in collaboration with colleagues; 99 of these relate to the carbohydrates directly, and of the remaining ten which come under the heading ferments, the greater part deal with carbohydrates indirectly. When one remembers that this work extended over about twenty years, and that the same twenty years were occupied with equally important and difficult and illumining research in other directions, one cannot but be filled with admiration for the great master in Berlin to whom chemists and biologists alike are indebted for so much he has done in the exploration of Nature's secrets by the method of experiment.

PHYSIOLOGY.

THE *Student's Handbook of Physiology*,[8] begun by the late Dr. ARTHUR CLARKSON, has been completed by Dr. DAVID FARQUHARSON, and published by Messrs. Livingstone. Dr. Farquharson has contributed the chapter on the central nervous system and some of the sections on the special senses. The book is a careful and very well illustrated compilation, but lacks the breadth of modern physiology and that value which the views of a writer would have who was in close touch with the researches of the last few years. For example, we miss any account of the recent work on the regeneration of nerve, and the striking experiments of Langley and others on the grafting of one nerve to another; likewise of the influence of posture on the circulation, an omission which leads to a most insufficient account of the principles which underlie the circulation of the blood; again, the important effects of changes of barometric pressure on the body are dismissed with insufficient notice. An old classification of the proteins is given, and the word "proteid" retained which has been given up by the general agreement of English physiologists. The cause of aphasia is placed in Broca's convolution, as if no Marie or Monikow had arisen to upset the old traditional localization. The book strikes us as mainly a rehash of older textbooks, and to have no features of its own which make it especially commendable to the student. It contains, however, in a clear and concise form as much as he needs to get up to pass his examinations.

We have received the third part of the second volume of the handbook of physiological methods[9] which Professor TIGERSTEDT is editing. The earlier parts of this useful work have already been noticed in these columns. The present part contains articles on muscle physiology. Dr. K. Bücker deals with the thermodynamics of muscle, giving at most inordinate length all the different methods of a dozen workers. The general mechanics of muscle are dealt with by Professor von Frey; the mechanics of special muscular movements by Professor O. Fischer; the electrophysiology by Dr. S. Garten. Professor v. Frey compresses his information into 30 pages, the other three authors manage to fill the rest of a large volume of 488 pages. The whole deals with the dullest part of physiological science, and one which is furthest removed from practical medicine, but experts on these particular branches of study will find here full information by thoroughly qualified men.

The instructions for the practical course of general physiology conducted at Glasgow have been published by Professor NOEL PATON in conjunction with Mr. HERBERT CLARK.[10] There is, as far as we can see, little new in the course or any freshness in form which particularly invites the use of these Glasgow syllabuses by other schools of physiology. The whole teaching of experimental physiology urgently wants remodelling in this country. The older experiments on frogs' muscles, etc., can now be replaced largely by a most interesting series of experiments on the circulation, respiration, etc., of the student himself, and amplified by work on the pithed rabbit, the organs of which can be maintained alive by artificial respiration. The student can thus be made familiar with those important problems of the respiratory and circulatory organs which he has to face in his clinical work.

The tables drawn up by W. BEHRENS for the use of microscope workers have proved so useful that they have

[6] *The Diagnosis of Nervous Diseases.* By Purves Stewart, M.A., M.D.Edin., F.R.C.P., Physician to Out-patients, Westminster Hospital; Physician to the West End Hospital for Nervous Diseases, etc. Second edition. London: E. Arnold. 1908. Demy 8vo, pp. 460. 15s.)

[7] *Untersuchungen über Kohlenhydrate und Fermente* (1884-1908). By Emil Fischer. Berlin: Julius Springer. 1909. (Roy. 8vo, pp. 920. M. 22.)

[8] *The Student's Handbook of Physiology.* By the late Arthur Clarkson, M.B., C.M., and David A. Farquharson, M.B., C.M. Edinburgh: E. and S. Livingstone. 1908. (Post 8vo, pp. 810; 474 figures. 12s.)

[9] *Handbuch der physiologischen Methodik.* Edited by Professor R. Tigerstedt. Band 2; 3 Ab. Leipzig: S. Hirzel.

[10] *A Practical Course of General Physiology.* By Noel Paton, M.D., F.R.C.P., and G. Herbert Clark, M.B., D.P.H. Glasgow: G. Maclehose and Sons. 1908. (Demy 8vo, pp. 39. 1s.)

appeared in a fourth edition, enlarged and improved by E. KÜSTER.[11] A number of distinguished workers in Germany, in each branch of the subject, such as Apáthy, Paul Mayer, Schiefferdecker, P. G. Unna, Czapski, have contributed to the preparation of these tables. The tables contain all the required information as to weights and measures, specific gravity of and percentage of dissolved substance in solutions of reagents employed, solubilities, refraction coefficients, magnification and apertures, fixing and hardening methods, injection masses, staining methods, culture media and methods of staining bacteria and protozoa, microchemical reagents, microscopical methods for investigating crystals and minerals with the polarimeter, etc. The matter is arranged in a very clear way, so that the practical instructions can be found in a moment.

PHYSICAL CHEMISTRY.

IN his *Theory of Valency*,[12] Dr. FRIEND has made a unique contribution to English chemical literature. Curiously enough, in Germany only a single monograph, written by Dr. Henrichsen, has hitherto appeared on the subject. The method adopted by the author has been to discuss a few of the earlier theories of valency, to treat in detail of the elements arranged according to Mendeléef's periodic law, and to conclude with a rather more elaborate review of current ideas. Considerable space has been given to the ingenious and convincing theories of Sir J. J. Thomson, and the author sums up strongly—as, of course, the evidence compels him to do—in favour of the electric view of valency. The juxtaposition of the conflicting explanations shows in a most striking way the difficulty of the whole question, and nothing need be said here further to emphasize the importance to chemical theory of the whole conception of valency being established on a firm foundation. Dr. Friend has done a most valuable service in collating and giving a clear expression to contemporary views. His work will prove of very great service to students in elucidating one of the most important chemical problems with which they are called upon to deal.

In his *Outlines of Physical Chemistry*,[13] Dr. GEORGE SENTER has made a very valuable contribution to Messrs. Methuen's Textbooks of Science series. The volume has been rendered necessary by the rapidly-growing importance of the subject, and special attention has been devoted to those portions presenting the greatest difficulty to beginners, such as chemical equilibrium, electrical conductivity, and electro-motive force. The book is perhaps hardly suitable, as, indeed, it is not intended, for those who are studying the subject without direction, for the inherent difficulties are not surmounted, despite the trouble Dr. Senter has taken. But, suitably directed, the student will find the work an invaluable guide to the theorems of physical chemistry, which he has usually to study scattered up and down the pages of textbooks of chemistry and physics. A very considerable improvement would be made in the text if Dr. Senter could induce one of his pupils to read it critically, and point out those portions which require amplification. As seems inevitable in a book of this kind, there are a considerable number of misprints. For instance, a few lines from the bottom of p. 46 a bracket has twice been misplaced; on p. 55 a reference is made to the line F B that appears nowhere on the corresponding figure, and so forth throughout the volume. These, however, will doubtless be corrected in a second edition.

NOTES ON BOOKS.

DR. WILLIAM ODELL, in a pamphlet entitled *Treatment of Pulmonary Tuberculosis with Ichthyol*, expresses a favourable opinion of the value of this drug, with which he has treated 123 cases out of the 165 under his care in the Western Hospital for Incipient Consumption, Torquay, since October, 1901. It must be borne in mind that all these patients have been under "open-air" treatment in a particularly favoured part of England, and that, as Dr. Odell points out, their improvement may be due to the general treatment quite as much as to the ichthyol. However this may be, Dr. Odell's 123 patients showed arrest of the disease in 29; 47 were very much improved, 12 much improved, 18 improved, 5 were "incurable," 2 "unsuitable," 5 unimproved, 1 died, and 4 are still in the hospital doing well. Dr. Odell is convinced that ichthyol tends to diminish the amount of coughing and expectoration, and therefore to minimize the liability to haemorrhage, and that it reduces temperature and increases appetite. He usually commences with 7½ minims in half a wineglass of water three times a day after food, and gradually increases to 10 drops thrice daily; though he has never gone beyond that dose, he has no doubt that larger doses would be tolerated in many cases. The nauseous taste of the drug can be obviated by giving it in capsules.

Volume xi, part 3, of the *Transactions of the American Ophthalmological Society* for 1908,[14] published recently, contains, as usual, a large amount of interesting material by many writers, most of whom are well known in the whole ophthalmic world. It is a record of the forty-fourth annual meeting of the Society, held under the presidency of Dr. Riseley of Philadelphia. Among the contributors are Drs. de Schweinitz, Holloway, Kipp, Shoemaker, Derby, Millikin, Arnold Knapp, Pooley, Pusey, Bull, Howe, Byers, and Major Henry Smith, I.M.S., who is so well known as the champion for the extraction of cataract within the capsule. He here deals with the extraction of immature cataract by his method. The illustrations are numerous and well done, both the coloured and those in black and white. The subject list ranges over pretty well the whole extent of ophthalmology.

The Pharmaceutical Pocket Book, 1909,[15] contains much useful information within a sufficiently small compass to justify the use of the term "pocket book." It is written primarily for pharmacists and pharmaceutical students, but much of the matter presented will be of service to any one interested in the preparation and supply of medicines. Articles on the analysis of water, milk, urine, and metallic salts, and on bacteriological examination of different kinds of materials, appear to be intended principally for those who have studied these branches of work and require a condensed account for handy reference, while the chapters on the science and art of dispensing and on volumetric analysis do not presuppose a knowledge of the subject, and should be of use to students. Much information is given in tabular form, as, for instance, particulars as to origin, constituents, etc., of all drugs in ordinary use, equivalents of metric and imperial measures of length, mass, and capacity, doses of official medicines, etc.; a fairly comprehensive dictionary of synonyms is another useful feature.

Volume I of *The Students' Pictorial Pocket Series*[16] is a little book on somewhat similar lines, but more limited in scope. It contains tables of dose, therapeutic action, solubility, etc., of official and unofficial medicines, a tabular summary of the composition and mode of preparation of galenical compounds, and so on. Much information is condensed into small space, and the employment of abbreviations is carried to the verge of obscurity. As a summary for use in preparing for examinations and for reference in subsequent practical work it will doubtless prove useful.

Dr. GEORGE F. EDWARDS, of Maidenhead, has written under the title *Old Time Paris, a Plain Guide to its Chief Survivals*,[17] a useful little book. Paris has to so large an extent transformed itself into a cosmopolitan city of pleasure that the inexperienced visitor, even if he has no particular desire to indulge in the distractions enumerated by the author in his first page, often finds it difficult to know where to look for old Paris with its old houses and characteristic life. Dr. Edwards tells him where to go and what to look for in a very systematic way, and his little volume will prove an invaluable companion.

[11] *Tabellen zum Gebrauch bei Mikroskopischen Arbeiten.* By Wilhelm Behrens. Fourth edition by E. Küster. Leipzig: S. Hirzel. 1908. (Roy. 8vo, pp. 253. M.7.)

[12] *The Theory of Valency.* By J. Newton Friend, Ph.D.Würz., M.Sc.B'ham. Textbooks of Physical Chemistry. Edited by Sir William Ramsay, K.C.B., F.R.S. London: Longmans, Green, and Co. 1909. (Cr. 8vo, pp. 194. 5s.)

[13] *Outlines of Physical Chemistry.* By George Senter, Ph.D., B.Sc.Lond., Lecturer on Chemistry at St. Mary's Hospital, London, etc. London: Methuen and Co. (Crown 8vo; pp. 387. 3s. 6d.)

[14] *Transactions of the American Ophthalmological Society.* vol. xi, part 3. Forty-fourth annual meeting. Hartford: Published by the Society. 1908. (Medium 8vo, pp. 457–756.)

[15] *The Pharmaceutical Pocket Book, 1909.* Edited by John Humphrey. London: The Pharmaceutical Press. 1909. (Pott 8vo, pp. 416 3s. 6d.)

[16] *The Students' Pictorial Pocket Series.* By James P. McDonald. Vol. I. *B.P. doses, solubilities, therapeutics, preparations, and poisons tabulated.* Brisbane, Queensland: J. P. McDonald. 1908. (Fcap 8vo, pp. 108. 3s. 6d.)

[17] *Old Time Paris, a Plain Guide to its Chief Survivals.* By George F. Edwards, M.D. London: A. Doubleday and Co., Ltd. 1908. Fcap 8vo, pp. 158. 2s.)

Nova et Vetera.

THE FOUNDERS OF THE EDINBURGH BOTANIC GARDEN.

In a book called *Under Petraia*, to which people who care about Italy, and especially those who remember *In a Tuscan Garden*, may be glad to have their attention called, we come across a connecting link between Scotland and Italy which has not, so far as we recall, been noted before in this column. At Padua, where the Admirable Crichton as well as the more famous Harvey were students, there is a botanic garden said to be the oldest in Europe. Now, Mr. Francis Steuart in the *Scottish Historical Review* for October, 1905, in discussing the roll of the university to which many Scots students resorted, mentions the name of one George Sibbald, of whom he says, "He, it is interesting to note, was uncle to the Sir Robert Sibbald who founded the Botanical Gardens in Edinburgh in 1667, and one cannot help connecting this with the mention of John Evelyn, the diarist, of the Garden of Simples, rarely furnished with Plants, which he saw when he too was a medical student at Padua."

There seems to be some doubt as the real share of Sir Robert Sibbald in the foundation of this institution. The first botanic garden in Edinburgh was called the Physic Garden, and lay in the hollow to the east of the North Bridge, on ground now covered by the Waverley Station, in the very bed of what was once the Nor' Loch. The old Physic Gardens remained there, at the foot of the Calton Hill, till they were transferred in 1770 to a spot on the west side of Leith Walk, resting there till 1824, when the present Botanic Gardens and Arboretum off Inverleith Row were formed. The Physic Garden, according to James Grant,[1] owed its origin to Sir Andrew Balfour, the son of Sir Michael Balfour of Denmylne. "An eminent physician and botanist, he was born in 1630, graduated in medicine at St. Andrews, prosecuted his medical studies under the famous Harvey in London, after which he visited Blois to see the celebrated Botanical Garden of the Duc de Guise, then kept by his countryman, Dr. Robert Morison, author of the *Hortus Regius Blesensis*, and afterwards, in 1669, Professor of Botany at Oxford. In 1667, Balfour began to practise as a physician in St. Andrews, but in 1670 he removed to Edinburgh, where, among other improvements, he introduced the manufacture of paper into Scotland. Having a small botanical garden attached to his house, and chiefly furnished with rare seeds sent by his foreign correspondents, he raised there many plants never before seen in Scotland. His friend and botanical pupil, Mr. Patrick Murray, of Livingstone, had formed at his seat a botanic garden containing fully a thousand specimens of plants; and after his death Dr. Balfour transferred the whole of this collection to Edinburgh, and, joining it to his own, laid the foundation of the first botanic garden in Scotland, for which the magistrates allotted him a part of the Trinity Garden, and then, through the patronage of Sir Robert Sibbald, the eminent physician and naturalist, Mr. James Sutherland, an experienced botanist, was appointed head gardener. After this Balfour was created a baronet by Charles II. He was the first who introduced the dissection of the human body into Scotland; he planned the present Royal College of Physicians, projected the great hospital now known as the Royal Infirmary, and died full of honours in 1694, bequeathing his museum to the University." The *Dictionary of National Biography* (iii, 48) gives us the additional information that Balfour visited both Bologna and Padua, where no doubt he saw the Botanic Garden.

Although Grant gives the chief credit of the foundation of the Physic Garden to Balfour, there is nothing in the whole statement to show that Sir Robert Sibbald—and possibly his uncle, George Sibbald, with his memories of the famous gardens at Padua—did not have a hand in the business. Sir Robert certainly appointed James Sutherland the superintendent of the garden. Sutherland was a gardener, and "seems," writes Grant, "to have been one of those self-made men of whom Scotland has produced so many of whom she may well be proud." In 1683 Sutherland published his "*Hortus Medicus Edinburgensis*, or a catalogue of the plants in the Physic Gardens at Edinburgh, containing the most proper Latin and English names," dedicated to the Lord Provost, Sir George Drummond. "In his little garden in the valley of the North Loch," continues Grant, "he taught the science of herbs to the students of medicine for small fees, receiving no other encouragement than a salary of £20 from the city, which did not suffice to pay rent and servants' wages, to say nothing of the cost of new plants, so difficult to procure in those non-travelling times."

In 1689, during the siege of the Castle, it was deemed necessary to drain the North Loch, with the result that the poor little Physic Garden was nearly washed away in the flood; it had at any rate all its precious plants covered with rubbish and mud. In his distress Sutherland appealed to the Privy Council, who, considering the good services he was rendering, "whereby not only the young physicians, apothocaries, and chirurgeons, but also the nobility and gentry, are taught the knowledge of herbs, and also a multitude of plants, shrubs, and trees are cultivated which were never known in this nation before, and more numerous than in any other garden in Britain, as well for the honour of the place as for the advantage of the people," awarded him a pension of £50 yearly out of the fines accruing to them. The Lords of the Scottish Treasury further aided him, and he was able to extend his operations to a piece of ground near Holyrood Palace, where, in 1695, he raised "a good crop of melons, other curious annuals, fine flowers, and other plants not ordinary in this country." James Sutherland had another hobby, for, in 1705, when he died, his collection of Greek, Roman, Scottish, Saxon, and English coins and medals was purchased by the Faculty of Advocates, and is still preserved in their library. In the *Edinburgh University Calendar* James Sutherland takes his place at the head of the list of the Professors of Botany, a list which ends with the name of Isaac Bayley Balfour, the present Professor and Regius Keeper of the splendid Botanic Gardens and Arboretum (covering about sixty acres) in Inverleith.

Little is heard of the Physic Garden for some years after the death of Sutherland. Probably, like many other things in the city, it suffered from the blight which fell upon Edinburgh after the union of the Scottish and English Parliaments. There were, however, Professors of Botany, Charles Preston and George Preston, and in 1738 Charles Alston became Professor of Medicine and Botany, the title which the chair bore until 1879, when John Hutton Balfour was succeeded by Alexander Dickson, who took again the old name of Professor of Botany. But the Garden became famous once more in 1761, when Dr. John Hope was appointed King's Botanist for Scotland, and when he was made by the Town Council Professor of Materia Medica and of Botany. Seven years later he resigned the professorship of the former subject in order to devote himself entirely to botany. He taught his students in the Physic Garden; but, finding that it was unsuited to the rapidly-advancing importance of the subject, he appealed for funds for a new garden, and succeeded in getting enough money from the Lords of the Treasury and the Town Council to acquire and lay out the new garden to the west of Leith Walk. Professor Hope introduced into Scotland the Linnean system, which had been opposed by his predecessor, Dr. Alston.

Hope, in his botanical garden, has been made a familiar figure to after-ages by Kay in his *Portraits*. A German traveller, named Frank, paid a visit to the new garden in 1805, and said, in praise of the plants: "I saw a beautiful *Ferula asafoetida* in full bloom; the gardens at Kew receive their plants from this garden." The present Botanic Garden and Arboretum in Inverleith, with its palm house, 100 ft. high, its rock garden, and its museum, all under the care of Professor Bayley Balfour, would indeed delight the eyes of that other Balfour who did so much, with the help of Sibbald and the example of Padua, to found its modest forerunner of the seventeenth century in the valley now given up to one of the largest railway stations in the world.

[1] *Old and New Edinburgh*, vol. i, p. 362.

The late Dr. Peter Horrocks, President of the Obstetric Society, London, left estate of the gross value of £40,207, with net personalty £39,422.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

XXIII.—INEBRIETY CURES.

PARTICULARS are here given of the results of the analysis of certain nostrums which are advertised for the cure of the drink habit. These form a somewhat distinct class from the "treatments" and "systems" in which, ostensibly at least, individual cases are dealt with according to their particular nature or peculiarities. The last of the remedies here described approximates to the class just referred to.

COZA POWDER.

Supplied by the Coza Institute, 76, Wardour Street, London, W., formerly 62, Chancery Lane, London, W.C.

Price 10s. per box, containing thirty powders.

This preparation is advertised with an offer of a free sample. An application for a sample brought a single powder together with a 10s. box to be paid for or returned, a book of 130 pages (which is referred to below), and a letter, from which the following is an extract:

Coza Powder has the marvellous effect of producing a repugnance to intoxicating drink of any kind, and may be administered in coffee, tea, milk, water, beer, whisky, brandy, or solid food without the partaker's knowledge.

Coza Powder does its work so silently and surely that any person interested in the intemperate can administer it to him or her without his or her knowledge and without him or her learning what has effected the reformation.

Coza Powder has reconciled thousands of families, saved from shame and dishonour thousands of men and transformed them into sturdy citizens and capable business men. It has led many a young man along the direct road to good fortune, and has prolonged by several years the lives of many individuals.

We particularly wish to draw your attention to the fact that we guarantee Coza Powder to be absolutely harmless.

The book which was sent, entitled *No more Drunkenness*, opens with the statements that

Coza Powder is one of the greatest discoveries of the day. There is nothing in the whole world to compare with it. It is the only powder to cure the craving for drink and drug habits.

The first few pages are devoted to a disquisition on drunkenness; then follow further claims for Coza Powder, such as

Coza is the name of a marvellous powder which possesses the quality of occasioning in him who takes it a dislike for alcoholic liquors and all intoxicating drinks. The drinker finds alcohol so detestable that even on the most tempting occasions it will be impossible for him to take a single drop.

A large part of the book is given up to what are called testimonials, with portraits stated to represent the writers; the large majority of these are dated from Continental countries. Those to which English names and addresses are appended are for the most part expressions of hopefulness, or records of little variations in drinking which are believed to be due to the powders; for instance:

My friend has been taking "Coza" this last two days, and he has had no desire for drink.

Enclosed you will find P.O. for which send me another box. I think the powders are doing my friend good. Send at once.

The last pages of the book are devoted to advertisements of Canexia Hair Elixir, Canexia-Brilliantine, and Canexia-Shampoo Powder, supplied from the Canexia Chemical Works, 61, Chancery Lane; and Anticelta Tablets for Obesity, and Brixa Tablets for Thin People, supplied from 62, Chancery Lane.

A visit to the address showed that the Canexia Chemical Works, the Coza Institute, and the offices of Anticelta and Brixa Tablets were all accommodated in three rooms on the second floor at 61 and 62, Chancery Lane, the double number representing one entrance of a large block of buildings containing hundreds of different offices. A photograph of the entire block, inscribed "Coza Institute," is given in the book just referred to. The address has since been changed to that given above.

The powders had an average weight of 1½ grain, the weights of single ones varying from ½ grain to 3 grains. Analysis showed them to contain sodium bicarbonate, 90.5 per cent., the remainder being a vegetable powder; microscopic examination of this powder showed that it agreed in all its characters with a mixture of equal parts of cummin fruits and cinnamon. No alkaloid was present, and no other ingredient of any kind could be detected. The formula is thus:

Sodium bicarbonate...	90 parts.
Powdered cinnamon	5 ,,
Powdered cummin	5 ,,

Estimated cost of ingredients for 30 powders, one-thirtieth of a penny.

DIPSOCURE.

Prepared by the Carlton Chemical Co., 43, Guildhall Buildings, Birmingham.

Price 9s. per box, containing 50 powders, 25 being white, and 25 tinted reddish-buff.

This article, like the preceding, is advertised with an offer of a free sample. Application for a sample brought also a stream of letters at short intervals, with abundant printed matter. A few extracts from the letters are here given:

Eminent medical men have over and over again declared that if a cure for drunkenness could be discovered both TASTELESS AND ODOURLESS, and placed in the hands of a devoted woman to administer SECRETLY, the greatest difficulty in effecting cures would have been overcome. "Dipsocure" IS TASTELESS and ODOURLESS, and CAN BE administered SECRETLY; so that it has been our privilege and good fortune to have solved the problem. Whilst counteracting and freeing the alcoholic-laden system of the poison, it is soothing to the nerves and restores the health, and is harmless to the most delicate person.

No matter how great the drunkard, or how many years he or she has been so, "Dipsocure" will absolutely and permanently cure any ordinary case, and transform the drunkard into sober, kind, generous, and loving men and women.

. . . two packages have been usually found sufficient (and frequently one), in the most severe cases of confirmed drunkards, to bring about a speedy and permanent cure.

Most drunkards imagine they suffer from some ailment, such as rheumatism, indigestion, headache, constipation, etc. No matter what it is they complain of, administer Dipsocure as the ostensible cure, and be certain of the result. It cannot harm the most delicate constitution of either man or woman, of whatever age, even if an overdose is taken; we guarantee this most distinctly. The preparation contains no poisonous or injurious drugs of any kind.

In a short time after use the sufferer will regain nerve power, improved appetite and health, and all alcoholic beverages will become absolutely nauseous to them—they will even shrink from the smell of them.

It acts through the blood, permeating every part of the system, disseminating (*sic*) and driving out the alcoholic poison, which cannot resist its action, completely restoring the patient to health, strength, and renewed vigour. It KILLS alcohol. The cure is as complete as it is certain and the patient REMAINS PERMANENTLY CURED.

. . . when a cure has been effected we ask you to kindly acquaint us of the fact, and perhaps you will then consider our agency proposal, showing how a good income can be made by introducing the cure to others. To show you the ease with which it can be sold, if you remit us 10s. three packages will be sent, two of which you can readily dispose of to other sufferers at 9s. each, thus making 8s. profit and obtaining one packet quite free.

The directions for use are:

Give one powder three times a day, before meals, dissolved in half a tea-cup of Hot Coffee, Tea, Whisky, Milk, Gin, etc.

Use either the brown or white powder, as the colour of the liquid may require.

The powders had an average weight of 4.2 grains, single powders varying from 2.9 to 6.0 grains. The composition of both kinds was found to be the same except for the trace of colouring matter contained in the tinted powder. Analysis showed the composition to be—

Acetanilid	6 parts.
Potassium bromide	35 ,,
Sugar of milk	59 ,,

Estimated cost of ingredients for 50 powders, one-third of a penny.

ANTIDIPSO.

Supplied by the Ward Chemical Company, 205, Regent Street, London, W.

Price 10s. per box, containing 48 powders, 24 being white and 24 tinted pinkish-buff.

The statements made about this article, in circulars and

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL:—1904, vol. ii, p. 1585; 1906, vol. ii pp. 27, 1645; 1907, vol. i, p. 213; vol. ii, pp. 24, 160, 209, 393, 530, 1653*; 1908, vol. i. pp. 833, 942, 1373; vol. ii, pp. 86, 505, 1022, 1110, 1193, 1285, 1566, 1697, 1875; 1909, vol. i, p. 31.

letters, are very similar to those made about the preceding one. A few extracts will suffice:

You will not forget that to insure an absolute complete and permanent cure for the craving, two boxes are invariably required. We have had data of cures effected with one box, but to make absolutely sure you will do well to immediately send us remittance, to the same value as the last, and get the second box of the specific.

Antidipso may be administered with or without the knowledge of the patient.

Should the patient be suffering from any trifling ailment such as indigestion, a rheumatic twinge, slight headache, or constipation, administer a powder in hot tea, coffee, or milk. No matter what the complaint may be, give Antidipso as the ostensible cure.

We enclose you a booklet shewing our agency terms. Kindly give it your attention as we are confident you will be so surprised and satisfied at the cure which will be effected that you will either yourself want to take up agency with us, or get someone in your district to do so.

The directions are:

Give one powder, dissolved in half a tea-cup of hot coffee, whisky, milk, gin, etc. (using either Brown or White Powder as colour of fluid may require) 3 times a day before meals.

The powders had an average weight of 5.3 grains, single powders ranging from 3.7 to 9.9 grains. The white and tinted powders were made of the same constituents, with a trace of colouring matter added in the latter case, but in different proportions. Analysis showed the composition to be:

WHITE POWDERS.

Potassium bromide	... ...	24.5 parts.
Sugar of milk	... ...	75.5 ,,

COLOURED POWDERS.

Potassium bromide	... ...	35 parts.
Sugar of milk	... ...	65 ,,

Estimated cost of ingredients for 48 powders, one-third of a penny.

THE TEETOLIA TREATMENT.

Supplied by the Teetolia Treatment Association, 97, New Oxford Street, London, W.

The following are extracts from the advertisement of this preparation:

After Years of Drink and Drug taking—
Cured in 4 days.

. . . The Teetolia treatment acts so rapidly and so efficiently that within four days from the commencement of administration the insistent craving for drink is absolutely destroyed—so much so, that even the thought of alcohol becomes nauseating. . . . Thousands have been cured by this treatment, and we guarantee to cure you. . . . If you write to-day, addressing the Teetolia Treatment Association, 97A, New Oxford Street, London, W.C., you will receive by return of post a private consultation sheet, together with a valuable book on this subject, post free in plain envelope, and you will be a free man within a week.

On application being made for further particulars, a booklet of twenty pages, entitled *The Teetolia Treatment for Alcoholic Excess, Drug Habits, and Resultant Nervous Diseases*, was sent, together with a letter and a form to be filled up with particulars of the case to be treated. The following are extracts from the booklet:

It has at last become recognised that the craving for drink, with its subsequent gratification, is a disease, and can only be combatted and overcome, like all other diseases, by scientific medical treatment.

This is not the place to discuss or pass judgment upon the various Licensing Acts introduced and passed into law by successive Governments. Whatever their merits or demerits may be, we are faced to-day with the stern fact that the consumption of drink and, consequently, the number of drunkards, with the exception of temporary fluctuations, are increasing yearly—in other words, that this terrible disease is extending and widening, carrying with it wherever it goes havoc, misery, want, and the destruction of domesticity. Nor does the disease die with its victim; the mysterious law of heredity comes into operation, and from generation to generation the disease is passed on from father to son, until finally, owing to its degenerating and pernicious influence, the family becomes extinct.

The discovery of the Teetolia method and treatment for the permanent eradication of the crave for drink and drugs marks an era in medical science. It is the outcome of a life's study of the subject by one of our best known West End physicians.

You can, whilst undergoing the treatment pursue your ordinary methods of living. You continue to take your daily modicum of alcohol; but somehow about the third or fourth day of treatment, without having made any physical or mental effort, you feel that you no longer want a drink; it holds out no attractions to you; its magnetic influence has gone. You can't understand it. You have not been actively resisting or fighting the craving, so far as you know; but Teetolia has been fighting for you. It has been producing its effect upon your nerve tissue, exercising its invigorating influence upon your brain, restoring healthy tone to your debilitated stomach, creating a normal, instead of a depraved, appetite, and so, not by the aid of any magic spell or philtre, but with the assistance of a discovery, purely scientific and rational, working in a natural way.

We are willing to supply you with sufficient medicine for eight days' treatment FREE of all charge. This will enable you to determine whether the treatment is acting successfully, for at the end of the fourth day an obvious and perceptible effect should be experienced. We impose no condition; we rely on your candour, honesty, and gratitude that at the end of the eight days' treatment, if you are convinced of the value of the Teetolia Treatment, you will forward to us the ordinary fee—£1 - 1s.—for same, but if you have derived no benefit from the treatment at the end of the same period, then you are under no obligation whatever to pay us one single penny.

The letters were on headed paper, at the top of which was printed, "All communications strictly confidential," and "Consultations with Physician by appointment." The first letter concludes as follows:

Please therefore fill in and return without delay the special statement sheet and upon our receiving it the Physician will go carefully into the case and will prescribe special medicine, which will reach you with expert advice in the course of two or three days in a perfectly plain sealed package.

The "special statement sheet," with the answers given printed in italics, was as follows:

CONFIDENTIAL PARTICULARS OF CASE.

Case No.

1. Age and Sex of Patient. *Male, 34.*
2. If married, what Family, if any? *Yes; two children.*
3. What class of stimulants is generally taken—Drugs, Beer, Wine, or Spirits? *Spirits.*
4. Has the habit been recently acquired; if not, how long established? *Nearly two years.*
5. Mention average daily quantity taken. *About a bottle of brandy.*
6. Is the habit persistent or intermittent? If the latter, mention ordinary duration of intervals. *Usually 2 or 3 days a week with very little drinking; and there have been two complete intervals of 3 or 4 weeks each.*
7. What are height and weight of patient? *5 ft. 9; 11 stone.*
8. Is the patient putting on flesh or otherwise? *No particular change.*
9. Is constitution generally healthy? *Yes.*
10. (*a*) Does the patient enjoy a good appetite? *Yes.*
    (*b*) Is the digestion good? *Fair.*
11. Does the patient suffer from sleepnessness? *No.*
12. (*a*) As far as you know is the heart sound? *Yes.*
    (*b*) Does the patient suffer from any organic malady? *No.*
13. Is temperament nervous or phlegmatic? *Nervous.*
14. Has patient ever suffered from any serious illness? If so, state nature of same. *Typhoid, fourteen years ago.*
15. Is there any family history of alcoholism? *One uncle is a drunkard.*
16. Has patient ever suffered from—
    (*a*) Any form of epilepsy? *No.*
    (*b*) Delirium tremens? *Once (perhaps more).*
17. Has the patient ever—
    (*a*) Submitted to any other form of treatment for alcoholism? *No.*
    or
    (*b*) Been an inmate of an Inebriates' Home? *No.*

Fill in here any further information concerning case that the Physician should be in possession of ———

Patients and their friends may rely with perfect confidence on all particulars of this case being regarded by the Association as strictly private.

The "expert advice," in a letter purporting to be from "The Medical Superintendent," sent with the medicine, contained these passages:

I want if possible, the patient to use his own endeavours to try and keep off alcohol during the first few days of treatment if this cannot be done, then the treatment must be commenced when the patient is not drinking, in order to give the medicine a better hold on the system. The dislike for alcohol, which we claim, does not come on all at once.

The eight days' treatment is enough to show you that it will do good, but, not sufficient in this case to effect a permanent cure. I would advise the patient to continue for at least a month to six weeks.

This is somewhat widely at variance with the statements quoted above. "You continue to take your daily modicum of alcohol" and "you will be a free man within a week."

The one-guinea "treatment" consisted of 2⅛ fluid ounces of a liquid of the nature of a vegetable fluid extract.

The directions were:

Half a teaspoonful to be taken in a little water every four hours during the day at 10, 2, 6, and 10 o'c.

Analysis showed this to contain 29.3 per cent. by volume of alcohol, and 2.3 per cent. of alkaloid, which consisted principally of quinine. The liquid agreed generally with a diluted liquid extract of cinchona; the amount of alkaloid is just under half what is contained in the official liquid extract of cinchona. In addition, treatment with suitable solvents extracted a trace of a non-alkaloidal bitter substance resembling the bitter substances obtainable from quassia, chiretta, etc.; these substances, however, do not possess well-marked characters by which they can be identified like alkaloids, and it was not possible to ascertain the drug from which this was derived; a preparation of chiretta appeared to be the more probable. No strychnine was present, and no evidence was obtained of any other ingredient.

THE PERCENTAGE OF NICOTINE IN VARIOUS KINDS OF TOBACCO.

PROFESSOR DIXON MANN, in an article published recently in the JOURNAL (December 5th, 1908, p. 1673) on some of the effects of excessive smoking, pointed out that recent investigations have afforded strong evidence that, contrary to the view very generally held in the past, nicotine is by far the most important constituent in producing the characteristic effects of tobacco smoke.

One fact which seems to have been established by these researches is that only a portion of the nicotine of the tobacco passes unchanged into the smoke, the greater part being destroyed by the heat; according to two of the investigators quoted by Dr. Mann the ratio of the nicotine in cigar smoke to the nicotine originally present in the cigar is liable to vary widely in the case of different brands of cigars. But after allowing for such variations it would appear to be true as a general proposition that the more nicotine there is in a cigar or any other form in which tobacco is smoked, the more the smoker is likely to take into the system. It is, therefore, of some importance to know the relative amounts of nicotine contained in different kinds of tobaccos. Further, if the results of such an inquiry show that the percentage of nicotine rises and falls *pari passu* with the character of the tobacco as "strong" or "mild" when judged by a smoker, collateral evidence will be afforded of the correctness of the view that the effects of smoking are principally due to the nicotine.

In previously published determinations of the amount of nicotine in tobacco, the methods employed have varied considerably, and in some cases, at least, their accuracy is very much open to question. A discussion of various methods would be out of place here; but the process employed in the analyses, of which the results are given below, must be briefly described.

A known weight of the tobacco was mixed with slaked lime and distilled in a current of steam until alkaloid was no longer to be found in the distillate; a rather prolonged distillation was necessary to reach this point, giving a rather large volume of distillate. The latter was then rendered decidedly acid with sulphuric acid and evaporated to a low bulk; the nicotine was then liberated by the addition of fixed alkali, and extracted by shaking out with six successive portions of ether; the aqueous liquid was reserved for further treatment. The ether solutions were mixed, and freed from any adhering fixed alkali or ammonia derived from the tobacco, by washing with a small quantity of water; water was then added, and the alkalinity of the ether solution (due to nicotine) was determined by titration with standard alkali. Methyl orange was added to the liquid to act as indicator; but, as the end point of the titration is by no means well marked, litmus paper was also used as a subsidiary indicator, small drops being taken out and tested at intervals; from the result of the titration the amount of nicotine was calculated, but, in view of the unsatisfactory end point, this result was not relied on. The liquid, now containing the nicotine as sulphate, together with sulphate of any alkali used in checking the end point, and of any ammonia from the tobacco that had not been removed by the washing, was evaporated to dryness on a water bath, and the nicotine sulphate dissolved out from the dry residue by means of absolute alcohol, leaving other sulphates undissolved. The alcoholic solution was evaporated to dryness, and the residual pure nicotine sulphate weighed; the corresponding quantity of nicotine was calculated from this weight, and was always found to be lower than the quantity calculated from the titration. The aqueous liquid which had been extracted with ether was found to retain a small quantity of alkaloid; it was accordingly acidified, and precipitated volumetrically by titration with Mayer's solution, the nicotine equivalent of which was ascertained by titrating a solution of pure nicotine in the same way. The end point is not well marked, so that it was only found possible to obtain approximate results; but, as the amount of nicotine determined in this way is only a small fraction of the total, the error so introduced is but small. The amount of nicotine found by this titration was added to the larger amount previously found. Control determinations made with pure nicotine showed that (after making this addition) the result deduced from the titration was rather too high, while that obtained by weighing the nicotine sulphate was too low, owing to loss of nicotine during the drying of the sulphate. The mean of the two gave a tolerably correct result, and the figures given below are such mean values.

PERCENTAGE OF NICOTINE IN PIPE TOBACCOS, CIGARS, AND CIGARETTES.

	Nicotine per cent.
Pipe tobaccos:	
A. Very mild honey dew	1.65
B. Smoking mixture, medium strength ...	2.04
C. Perique	3.29
D. Cavendish	3.83
Cigars:	
E. Havana, mild	1.09
F. Havana (same maker), strongest ...	1.58
G. Havana (another maker), "mild" ...	1.95
H. Indian, strongest	1.84
I. "Patent non-nicotinic" (German) ...	0.58
Cigarettes (after removing paper):	
K. Egyptian	1.13
L. Turkish	1.30
M. Virginian	2.24
N. Common, five a penny	2.02

Of the pipe tobaccos, Perique and Cavendish are the strongest varieties obtainable, and are usually employed only for mixing with other kinds. The cigars taken for examination were all of good quality, and (except *I*) of well-known brands. *G* is the only case in which the result is strikingly at variance with what might be expected. This was a light-coloured cigar, and was supplied by a large firm of tobacconists as the mildest cigar they kept in stock; but in the opinion of a smoker, although certainly mild in flavour, it produced more effect on the heart than most mild cigars. The cigarettes, except *N*, were of good quality and well-known brands. In view of the fact that ill effects from cigarettes are sometimes ascribed to the paper, this was separately examined. The fibre of which it is composed was practically the same in all four cases, and appeared to be a mixture of flax and hemp. None of the papers, however, consisted of pure fibre, and examination of the ash gave the following results:

	Percentage of Ash.	Metals found in the Ash.
Egyptian (printed with brand in bronze letters)	7.0	Copper (0.2 per cent. of weight of paper), aluminium, iron, magnesium, calcium.
Turkish (printed with brand in bronze letters)	10.7	Copper (0.8 per cent. of weight of paper), aluminium, zinc, iron, magnesium, calcium.
Virginian (printed but not in bronze)	3.8	Aluminium, iron, magnesium, calcium, sodium, potassium.
Common (printed but not in bronze)	3.8	Trace of lead; iron, magnesium, calcium.

THE

THERAPEUTIC APPLICATIONS OF RADIUM:

METHODS AND RESULTS.

A NOTE ON THE THERAPEUTIC APPLICATION OF RADIUM.

By J. M. H. MACLEOD, M.A., M.D., M.R.C.P.,

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THE advances which have been made recently in radium-therapy have been the result chiefly of the improved technique of application adopted by our French colleagues, in which, instead of the radium salt being applied in a glass tube or aluminium box, it is spread by means of a varnish on a metal or stiff linen surface. The suggestion of varnishing the radium on to a flat surface is an old one, and was made in 1905 by M. Danlos. It is to M. Danne, however, that we are indebted for an efficient varnish, which, while firmly fixing the radium salt to the surface of the metal, is unaffected by the action of the atmosphere, moisture, and ordinary antiseptics. The composition of this varnish has so far been kept secret. It is the sulphate of radium, either pure or diluted with sulphate of barium, which is fixed by the varnish, this salt being chosen in preference to the bromide of radium as it is insoluble, while the bromide is readily soluble.

The advantages claimed for the French method of application are:

1. That by it practically all the rays from the radium are available, the less-penetrating rays not being intercepted by the glass, mica, or aluminium windows of the older "applicators," and

2. That with a given quantity of radium a much larger radio-active surface is obtained, over which the radio-activity is evenly distributed.

The first of these advantages would seem, as far as our knowledge goes at present, to be of considerably less account than the second, for by the mica or aluminium screen only the alpha rays and the softer beta rays are cut off, while the hard beta and gamma rays to which radium probably owes its selective action on diseased tissues are not intercepted. Indeed, doubts have been cast on the capacity of the alpha rays to penetrate even the varnish. According to Professor Soddy's opinion, as expressed in a recent issue of this JOURNAL, "in the absence of any definite physical tests proving that the alpha rays are capable of getting through this coating, the natural presumption would be that they were completely absorbed." On the other hand, Wickham and Degrais have repeatedly asserted that a proportion of alpha rays are emitted by the varnished surface. It is customary, however, to interpose a thin layer of gutta-percha between the varnished surface and the skin to prevent soiling the specimen, and this procedure effectively cuts off the alpha rays. Again, different screens of lead, aluminium, etc., are sometimes employed so as to intercept all but the highly penetrating gamma rays, as in the case recorded by Dominici and Bory, where an epithelioma of the lip, the size of a five-franc piece, was dispersed by radium, only the gamma rays being allowed to act upon it, so that, after all, the presence of the mica or aluminium screen in the old applicators may prove to have been no disadvantage.

The case is very different with regard to the second advantage of the French method—namely, the increased extent of radio-active surface. It has been estimated that when spread out 1 cgr. of a radium salt of an activity of 100,000 has approximately the same effect on the tissue as 5 cgr. of a salt of an activity of 600,000 collected in a small mass in a glass tube. To get the full value of a given quantity of radium salt it is necessary to have it spread evenly over a surface, and, within certain practical limits, the larger the surface the better. By means of Danne's varnish the sulphate of radium has been perfectly spread and fixed on metal surfaces of different shapes and sizes. It is a different matter, however, with the bromide of radium, for, being soluble, it is unsuitable for varnishing. In this country those who have been using radium therapeutically during the last six years have chiefly employed the bromide, and they are presented with the difficulty of having it spread. I am aware that it is possible to have the bromide transformed into the sulphate, but there is a certain risk of loss in this process. There is another way, however, of dealing with the matter which is fairly satisfactory, and that is the simple expedient of having the radium bromide crushed down to a fine powder, and evenly spread and pressed in the thinnest possible layer between a metal back and a thin aluminium or mica window. I recently had 5 mgr. of pure radium bromide removed from an applicator, where it was in the form of small amorphous lumps, crushed down and spread in the above manner over a circular area 1 cm. in diameter. On examining it with a platino-barium-cyanide screen, the fluorescence was almost if not quite as great over the whole surface as it had been in the much smaller area presented by it before it was spread, and its therapeutic value was found to be proportionately greater than before.

In this way there is no great difficulty in constructing flat "applicators" of different shapes and sizes in which the radium bromide, either pure or mixed with a definite quantity of some inert salt, is thinly spread over a flat surface. For example, I have had a locket-shaped applicator made with a narrow frame and a mica window 2 cm. square, in which 1 centigram of pure radium bromide may be mixed with 3 centigrams of the inert salt, and the mixture evenly spread over an area corresponding to the window, so that each square centimetre contains 1 centigram of the radium bromide mixture of a radio-activity of 500,000.

By the use of such "applicators" one of the advantages, probably the main one, of the French method can be obtained in the case of the bromide, without having it exchanged for the sulphate, which at present is 25 per cent. more costly, or running the risk of having it transformed into the sulphate, and this can be accomplished in a manner in which the radium salt is completely protected by being fixed in an applicator, instead of being exposed to friction and possible loss, as it is when varnished on a metal surface.

TREATMENT OF ANGIOMATA.

[FROM OUR PARIS CORRESPONDENT.]

IN two preceding articles in the BRITISH MEDICAL JOURNAL (March 6th, p. 609; March 27th, p. 797) the broad lines of the various methods employed by Drs. Wickham and Degrais in radium-therapeutics have been described; the results obtained in certain maladies will now be considered. The progress realized in the treatment of angiomata is one of the most interesting. Drs. Wickham and Degrais, whose conclusions are founded on about 350 cases, state that the results are extremely favourable in the projecting, but more difficult to obtain in the superficial and flat, forms. The following case is reported as one of the most extraordinary:

The life of a baby a few months old was in danger on account of the size and the number of vascular tumours which covered its face; one situated on the lower lip was very large, violet, and filled with blood, swelling up at the least exertion. It spread on to the buccal mucous membrane, and made feeding extremely difficult. The lip hung down, and was useless for suction; the child had to be fed with a spoon. There was another tumour on the upper lip, blocking the two nostrils to such an extent that the child breathed badly and incompletely. The right eye was completely hidden by two vascular tumours, one on the upper and the other on the lower eyelid, which touched and closed the right eye. These tumours affected the conjunctiva as much as the skin surface. The right ear was blocked by an enormous vascular tumour, which had developed in front of the ear, completely blocking the external canal, the naevus itself extending into it. These were the principal tumours, but there were others. All were raised above the surface; some were covered with normal healthy skin, in others the skin was violet. The child, then thin and puny, was brought in this condition two years ago to Dr. Wickham; treatment was commenced and the child was then transformed. The eye is freed, respiration takes place normally, the lip has almost regained its natural form, the violet discolorations have entirely disappeared and traces of the projecting tumours can be found only on looking very closely. The case shows the superiority of radium over all other methods of treatment, for neither surgery, x rays, nor electrolysis could have attempted to cure a case of such gravity. The treatment

was simple, but required great patience. Each tumour, wherever possible, was treated by the method of "cross-fire," an apparatus being placed above and another below. In this case the apparatus chosen were of feeble intensity, and placed bare on the tumours, being left in contact with the tissues for a time shorter than could cause any surface irritation; for instance, knowing that a certain apparatus would cause irritation of the surface if applied for twenty minutes, it was only left in position for ten minutes. Owing to the "cross-fire," the tumour was thus affected in its interior as by a single application of twenty minutes. The applications were made each day for ten days, followed by ten days' rest. When it was not possible to employ "cross-fire" the apparatus was applied directly on the tumour for as long as was possible without causing any irritation. All the angiomata diminished in size, and the face was restored to a natural appearance.

This was an extreme case, but Drs. Wickham and Degrais have treated by the method of "cross-fire" numbers of patients who only had a single tumour, which was cured without any irritation of the skin.

When angiomatous tumours affect the skin proper, it is sometimes of advantage to produce a slight irritation of the surface, but not when the tumour is completely subcutaneous. The following case has a great practical and scientific interest from this point of view:

A young girl, 15 years of age, had a vascular tumour in the substance of the right cheek, without any violet discoloration either of the skin or of the mucous membrane; the swelling looked as if the girl had placed a nut between the jaws and the cheek; the face was deformed, and was quite asymmetrical. The diagnosis of a vascular tumour was made because the swelling was soft, was increased by exertion and diminished by pressure. In this case, as treatment by "cross-fire" was indicated, one apparatus was placed on the mucous membrane, and the second on the skin surface. The length of the applications was chosen so that neither of the surfaces was inflamed; the apparatus placed externally on the cheek was covered with a sheath of lead 2 mm. thick, so that only rays of great penetrating power were employed. The treatment was carried out in four series, each at two months' interval. Each series consisted of ten applications, one apparatus being applied to the skin surface for twelve hours each day, the other to the mucous membrane of the cheek for one hour each day; the latter apparatus was covered with lead 1 mm. thick. At the present time the appearance of the cheek is almost normal and similar to the other one. The calibre of the blood vessels has been reduced without the slightest irritation of the skin.

The superiority of radium over other therapeutic methods seems still more clearly shown in the following case:

A baby had a raised vascular tumour of the upper eyelid spreading over the eyebrow and a portion of the forehead. The tumour had been excised by a surgeon of undoubted ability but re-formed a month later, becoming even larger than before. It was then treated by cauterization, with the result that it became smaller but returned. This relapse was treated by electrolysis without any appreciable result. Radium treatment was then suggested, but the case was in a bad condition for treatment by radium, insomuch that the operation had produced hard, sclerotic, cicatricial tissue. In spite of that radium had quite a surprising effect, the tumour diminished without inflammation, and for the past year it has been level with the surface.

When port wine marks are superficial and not raised above the surface, Drs. Wickham and Degrais use apparatus of feeble radio-activity but of comparatively large surface; gradual discoloration is obtained by the repetition of the applications. They advise that the treatment should be specially applied to those forms that are deeply coloured and infiltrated. Up to the present time, at least, they do not advise treating those forms which are very superficial, and especially very pale in colour. The latter can be easily concealed by the use of toilet preparations, and the results of treatment are not sufficiently marked.

SANITARY APPLIANCES.

An Antiseptic Dust-Preventer.

THE watering of roads with a solution of calcium chloride for the purpose of preventing dust rising appears to be meeting with considerable success, and a useful application of the same method for employment in sweeping rooms has been made by Dusmo, Limited (West Ham Lane, Stratford, London, E.). This firm has submitted samples of two materials which they prepare under the names "Dusmo" and "Lydus," respectively for use on carpets and on linoleum or boards, etc.; a line of the material is spread on the floor at the place where sweeping is to be begun, and this is then swept forward as the work proceeds, the effect being to prevent dust rising, and to retain it in close mixture with the sweeping material, where it is acted on by antiseptic constituents. Practical trials showed that the materials answered their purpose in a very satisfactory manner; examination showed them to consist of mixtures of sand and sawdust containing calcium chloride, together with a substance yielding formaldehyde on exposure, and fragrant terpenes. Such a material may prove of great use in hospitals and sick rooms, and possesses considerable value for ordinary domestic purposes.

MEDICAL AND SURGICAL APPLIANCES.

A Squint Reader.

THE Squint Reader illustrated is designed by Dr. Arthur Greene, of Norwich, to provide a strong and not expensive apparatus by which repeated and long-continued binocular use of the eyes may be ensured during the treatment of concomitant squint in children able to read, the vision of whose squinting eye has by exercises and the aid of appropriate lenses been brought up or nearly up to that of the "fixing" eye. The general plan of the apparatus can be seen by a glance at the illustration. By placing a book on the bookholder, with the middle of the *page to be read*

(not the middle of the book) opposite the middle of the apparatus, the sliding "interruption block" can easily be moved to such a position that, on the child looking through the sight-hole end, it is impossible to read the lines of the book unless exercising true binocular vision. The features of the apparatus are: (1) Its strength; (2) its portability—it can fold so as to be almost flat; (3) the bookholder is constructed to hold almost any kind of book or magazine; (4) it can be used with ordinary story books instead of fixed figures or letters, of which the most up-to-date child would soon tire; (5) its cheapness, enabling it to be used for hospital patients. The ideas of the designer have been faithfully carried out by Messrs. F. Davidson and Co., of 29, Great Portland Street, London, W.

LITERARY NOTES.

THE Boston Medical Library, we learn from the *Boston Medical and Surgical Journal*, has arranged a series of exhibitions illustrating various epochs in the history of medicine. The first includes collections of works of the Hippocratic era and the School of Alexandria; the second Roman Medicine and the Byzantine Period; the third Arabian Medicine and the School of Salerno; the fourth Monks and Scholastics and the Pre-Renaissance; the others the medicine of the sixteenth, seventeenth, eighteenth, and nineteenth centuries respectively. The Boston Medical Library possesses many rare volumes and manuscripts relating to medical science. We hail with pleasure the signs manifested in different countries of the awakening of an interest in the history of the development of medical science.

To the *Contemporary Review* for March Mr. E. L. Butcher contributes an interesting article entitled "The Exorcism of Hydrophobia." He prefaces it by the statement that hydrophobia was introduced into Egypt at the time of the British occupation by a dog belonging to an Englishman. This led to the revival of a custom in the Egyptian Church which implies that rabies must have been known in Egypt in early Christian Ages, and Mr. Butcher thinks it probable that the ceremony as now performed is the adoption and sanctification of what had been an attempt in ancient Egypt to treat patients suffering from hydrophobia by hypnotic suggestion, at the same time isolating and guarding them. The

ceremony, as described to Mr. Butcher by an Egyptian who had taken part in it, is as follows: The case was one of a child whose mother applied for help to the narrator's uncle. She was instructed to rise early on the morning of the next day, being Saturday, bake seven thin loaves of bread and prepare a handful of dry dates. Neither she nor the patient was to eat anything that day till the ceremony was over. On Saturday the narrator got up at five o'clock in the morning, and packed up in a small cloth bag a small censer, two phials—one full of the church wine, the other of anointment oil—and the book containing the ritual. He had also to collect six other children of his own age to take part in the ceremony. The rite began with the recital of the Lord's prayer; then incense was offered with the prayer of thanksgiving. Next came the prayer for the sick, after which the fifth chapter of the Epistle of St. James and the seventh of St. Luke were read in Arabic and in Coptic. After three short prayers had been said the Apostles' Creed was recited by all present. They then made a ring round the patient, and the celebrant, standing outside the ring with a silver cross in one hand, proceeded to read the story of the martyr Abu Tarbo and his encounter with a mad dog. The story is as follows:

When Theodosius the Just came to power he ordered that all persecutions should cease, and religious liberty should be granted to Christians. Consequently all the instruments of torture were destroyed, the gates of prisons were opened, and the prisoners who were convicted on account of their religion were released. Amongst these prisoners was the famous saint, Abu Tarbo. He was set free, and while he was on his way home a fierce mad dog rushed upon him, opening wide his jaws. Abu Tarbo trembling with fear, knelt down, lifted his eyes towards heaven, and without moving his lips or raising his voice, cried out unto the Lord; and the Lord heard him. By a sudden inspiration and courage he rose up, stepped towards the dog, and struck him dead with a stick that was with him. A moment after he heard a voice from above saying, "Tarbo, I give thee the power of healing all those who are bitten with rabid animals." He then thanked the Lord, and proceeded on his way again, repeating, "Thou shalt not be afraid for the terror by night, nor for the arrow that flieth by day, for the pestilence that walketh in darkness, nor for the destruction that wasteth at noonday. A thousand shall fall at thy side, and ten thousand at thy right hand, but it shall not come nigh thee." It happened that a few weeks after this incident the only son of a widow, who lived at the same village where Abu Tarbo lived, was bitten by a rabid dog. The widow took her son and went to him. Abu Tarbo performed this ceremony: anointed the child with sacred oil, sprinkled upon his face consecrated water, and gave him seven mouthfuls of unleavened bread and dry dates, telling him that he should take no more than one mouthful a day. After the lapse of seven days the child recovered from this terrible disease, and was able to come to him on the seventh day and thank him.

Mr. Butcher says that by Theodosius the Just no doubt is meant Theodosius the Spaniard, who became Emperor of Rome in 379 A.D. It is probable, however, that this curious practice is a survival from Pagan times, which may have been first sanctioned and adapted to Christian uses by the saint whom the story calls Abu Tarbo. The ceremony concluded with a long prayer. Whenever the word "dog" occurred in the prayer the celebrant struck a china bowl with a stick as if he was driving away an evil spirit. One of the children barked and howled as this was done. Then the children formed a fairy ring and circled round the patient seven times, reciting a spell consisting of verses from the psalms. They then sat down without breaking the ring. The celebrant thereupon took the towel with the unleavened cakes and dry dates off the child's neck, and after rubbing them with the sacred oil and wine made the children bite off pieces. Before biting, each child was told to walk on his hands and feet, and to bark and snarl as much like a dog as he could. Then portions bitten off the cakes were given to the patient to eat, one each day. He was then rubbed on forehead, chest, and wrists with oil, and the holy water was sprinkled about his bedroom. After seven days the child was back among his companions. The Egyptian says that he often took part in this ceremony, and it was always successful, but he judiciously remarks:

It may have been that the patients were bitten by animals that were not really mad, or, if they were bitten by rabid animals, they might have recovered by the effect of the action of the ceremony upon the patients' minds.

We may add that at the shrine of St. Hubert in Belgium, a method of treating hydrophobia by religious rites is, or was till lately, practised. It is on the character of that saint as a mighty hunter before the Lord that his cult as a healer of rabies is founded.

MEDICAL INSPECTION AND AFTER.

LONDON.

Medical Treatment of School Children.

At the meeting of the London County Council on April 6th the debate on the report of the Education Committee, recommending the subsidization of hospitals and dispensaries in order to provide medical treatment for school children, was resumed, but, on the ground that no estimate as to probable cost had been presented, the motion by the Chairman of the Finance Committee to refer the report back to ascertain the cost of treating each disease was accepted.

Dr. Salter moved to add an instruction to the Committee to bring up a scheme for the establishment of school clinics, arguing that hospitals in London were so distributed that they could not provide medical treatment for the children in many districts. Medical opinion, as represented by the British Medical Association, and dental opinion also, were in favour of school clinics. Dr. Salter quoted Dr. Kerr's estimate that twelve clinics could be established for £20,000 per annum.

The Chairman interrupted further quotations by ruling that members must not quote from a report of an officer who had not been accepted by the committee concerned, and so it came about that the only figures which the Council had before it were contained in an estimate by Mr. A. A. Allen, M.P., who pointed out that medical men were employed by the Council at present for quarter time—nine hours a week—for £150 a year. From this he calculated that in twelve clinics 70,000 to 80,000 dental cases could be treated per annum, and about half that number of eye cases at a cost of about £25,000 a year. Mr. Allen thought the Council should consider very carefully before it introduced a system of rate-aid for hospitals. It was unfortunate, he said, that no estimates prepared by the medical officer were before the Council, for the wildest rumours were going about. One member suggested to him privately that the cost of treating teeth alone would be about £200,000 a year. Clinics in the long run would be cheaper and more efficient.

Mr. Bray objected to the proposal to make grants to juvenile friendly and other benefit societies for purposes of medical inspection. The result would be, he said, that the Council's teachers would be canvassing on behalf of benefit societies and for the ultimate extinction of the private practitioner.

The Moderate view was expressed by Mr. C. U. Fisher and Mr. Ernest Gray.

Mr. Fisher looked with suspicion upon the employment of medical men and dental surgeons by the Council. If small fees were paid at first they always tended to increase. Mr. C. U. Fisher glanced back to the Education Act of 1870 as the first step in the direction of "undermining parental responsibility." This question of medical treatment should "only" be considered from the point of view of cost.

Mr. Ernest Gray seriously distrusted the estimates of cost presented by the medical profession. They had taken, he said, a very strong and narrow trades-union attitude in this matter. One northern borough sent an advertisement to a medical journal for an officer to carry out medical inspection, and the journal refused to insert the advertisement because the salary was not high enough. The sum offered was £300 and it was said that it must be £500.

The amendment was lost by 75 votes to 42.

Dr. Beaton moved a further amendment directing the committee to prepare immediately a scheme for medical treatment, taking advantage of institutions which existed, and for establishing school clinics where other provision was inadequate. He urged that if the two methods of dealing with the question were adopted the Council would be able to cover the whole need and find out from actual experience which was the cheaper.

This amendment, however, was lost and the report, as already stated, referred back.

The new pathological block at St. Bartholomew's Hospital will be opened by the Lord Mayor, who will be accompanied by the Sheriffs, on Friday, May 7th, at 3 p.m.

British Medical Journal.

SATURDAY, APRIL 10TH, 1909.

MR. TROUTBECK AS THE SURGEON'S FRIEND.

LESS than a year ago we had occasion to comment—not for the first time—on the extent to which the Coroner for Westminster and the South-West District of London magnifies his office. In the JOURNAL of June 13th, 1908, we published a report of a case in which death had occurred in the Bolingbroke Hospital after an operation for the removal of a tumour of the cerebellum. The operation was performed by Sir Victor Horsley; it was done with the full consent of the patient; death would have been inevitable after a few months of wretchedness if it had not been performed; and the reputation of the surgeon gave assurance that it was done with the utmost skill. In the face of these facts Mr. Troutbeck insisted on holding an inquest, as the result of which he directed that a verdict of "Accidental death" should be returned. In commenting on the case we pointed out that in holding this inquest Mr. Troutbeck had gone altogether outside the powers conferred upon him by the Coroners Act, 1887. In Section 3 of that Act it is provided that an inquest shall be held "where "a coroner is informed that the dead body of a person "is lying within his jurisdiction, and there is reason-"able cause to suspect that such person has died "either a violent or an unnatural death, or has died a "sudden death of which the cause is unknown." Mr. Troutbeck attempted to justify his arrogation of a right, which is not, as far as we know, claimed, and which is certainly not exercised, by other coroners, by the plea that "a death that has been accelerated by "an operation cannot possibly be said to be a natural "death." He went on to say that a considerable proportion of deaths which undoubtedly were in great part due to surgical operations were never reported to the coroner. They were certified, and owing to our system of certification the certificates were accepted. The registrars did not forward them to the coroners, as he thought they should, because they were not fully aware of the obligations of the Act of Parliament. He was convinced that the result was that throughout the country we were in a complete state of ignorance as to what proportion of deaths were accelerated by surgical operations. It was a serious matter and one for which a legal remedy was undoubtedly required. He regarded it as extremely important from the public point of view, and in these matters the coroner represented the public, on whose behalf such cases ought to be inquired into. They could leave these questions to no profession whatever, however honoured or however skilled. He expressed the intention of not letting the matter stand. These remarks, together with his general practice—as to which Lord Halsbury said that his impression of it was not favourable—were not unnaturally taken to show that Mr. Troutbeck, for some unknown reason, had thought fit to take up an attitude of hostility, or at least of malevolent neutrality, in regard to the profession. But it appears that we have been mistaken, and that the coroner for the South-West District is in reality the doctor's friend, and in particular is anxious to shield the operating surgeon from blame, and to vindicate his ways to men through the medium of the enlightened juries whom he directs.

Mr. Troutbeck made his first appearance in this new character at two inquests held not long ago, reports of which are published elsewhere in the present issue. In one of the cases a patient suffering from cancer of the bladder was operated on by Mr. Sampson Handley. It was explained to the patient beforehand that the operation was extremely dangerous, but he elected to take his chance. Death took place shortly after the operation, which, if successful, might have prolonged the man's life for years; had nothing been attempted for his relief, the only prospect before him was a brief period of miserable existence. The coroner was pleased to express the opinion that there could be no doubt Mr. Handley was justified in undertaking the operation in the circumstances, and the jury obediently returned a verdict of "Accidental Death." The other case was that of a boy with peritonitis probably caused by appendicitis; the bowel was gangrenous for a length of 10 to 12 inches. As there was just a possibility of saving the child's life, Mr. Swainson operated. Death, however, took place soon afterwards. Here again Mr. Troutbeck came forward as the surgeon's friend, and decided that the operation was fully justified, whereupon the jury returned a verdict of "Accidental Death." In one of the cases he said that these inquiries were primarily for the benefit of the public, and he was good enough to add that they were perhaps of even greater benefit to the operators, who were given this opportunity of showing that they had taken the right course. He went on to say that it was a great satisfaction to them to hear a jury express approval of their efforts at a public inquiry! We fear that they, like ourselves, may have misconceived Mr. Troutbeck's friendly intention. But, indeed, it would seem that he has been wholly misjudged. The profession had not suspected that Mr. Troutbeck is a humorist. What has been taken for the insolence of office was humour. The idea that a leading surgeon should be gratified by the approval of his work expressed by a coroner's jury is truly comic. Now that we understand Mr. Troutbeck, we see that the absolution gratuitously bestowed by him upon surgeons who have done their best in almost hopeless circumstances is not impertinence but friendly fun.

Nevertheless, we take leave to think that he is not happy in his choice of occasion for his jokes, and that they are rather beneath the dignity of his high office. The surgeons may well pray to be saved from so over-zealous a friend. If, with the most benevolent intentions, inquiries are to be held on every case in which a coroner may think fit to assume that death has been hastened by an operation, a number of lives that might otherwise be saved will be sacrificed, and a still larger amount of suffering that might be averted will have to be endured. No surgeon will care to submit his highly skilled workmanship to the judgement of men utterly incompetent to form an opinion on its value. The art of surgery, too, will necessarily suffer, as we have more than once pointed out, if operations that must, from the very nature of the case, be more or less in the nature of desperate remedies for desperate diseases are to expose the

surgeon to the criticism of ignorance and, it may be, prejudice.

The points to be noted in both the cases reported in our Medico-Legal column, is that in each of them the patient was doomed to certain death within a short period of time. In one the operation may have accelerated the fatal issue by two or three months; in the other by about as many hours. In each case every consent that was necessary was given, and in each case the relatives were fully satisfied that everything possible had been done to save life and prevent future suffering. In each case, too, the operator was a surgeon of experience and proved skill and judgement, and there is probably not another coroner in the country who would have wasted public money and the time of busy men—to say nothing of the annoyance caused to the relatives—by holding an inquest. The inquiry was quite unnecessary, and did no good to any one, except to those to whom it was a source of profit in the shape of fees.

The point, therefore, to be determined is not whether the surgeons were, in Mr. Troutbeck's opinion, justified in operating, but whether the coroner was justified in holding an inquest when there was absolutely no reasonable cause to suspect that the death was violent or unnatural. Mr. Troutbeck, as we have seen, holds that if death is accelerated by an operation it cannot be called "natural." We should like to know by what legal casuistry such a death can be called "accidental." Inquests are held as a matter of course on cases in which patients have died after an operation performed to remedy the effects of an accident, but in such cases it is the accident, not the operation, that forms the object of inquiry. There is nothing whatever in the Coroners Act to justify Mr. Troutbeck's extension of the meaning of the words "unnatural death." If this interpretation of what constitutes an unnatural death is to be accepted, a coroner may assume that in any given case death was accelerated by medical treatment; and if he has Mr. Troutbeck's tender regard for the reputation of the profession, he will hold an inquest in order that the doctor may have an opportunity of showing that "he took the right course." On the other hand, inquests on deaths occurring among the Peculiar People, or under the hands of Christian Scientists and faith-healers, should be regarded as unnecessary, because they are in the strictest sense "natural."

It is to be hoped that the Departmental Committee now sitting will once for all settle the question of a coroner's authority in such cases. In a recent debate at the Medical Society of London, Mr. Walter Spencer, who was himself some time ago a victim of Mr. Troutbeck's high-handed procedure, pointed out that the difficulties which had arisen between coroners and medical practitioners were partly due to the difference in the education which formed the legal as distinguished from the medical mind, and which often made it difficult to find a common ground upon which to argue. This is true, and the only way to avoid the difficulty is that only men who have had a medical as well as a legal training shall be appointed to the office of coroner. If any further argument in favour of this proposal were required, it is to be found in the procedure adopted by Mr. Troutbeck. The profession would probably rather have him as an open enemy than as a friend in disguise. In any case a man with so eccentric a notion of humour is out of place as a judge of the serious and difficult work of operating surgeons.

THE "CURE" OF CANCER WITHOUT OPERATION.

We have repeatedly found it necessary to deal with new suggestions for the treatment of cancer, and each time it has unfortunately been our duty to return a verdict "not proven." No excuse is needed for returning to this subject, for the terrible nature of the disease, its appalling frequency, and our helplessness in dealing with it, all render every attempt to discover a method of treatment which offers some hope to the patient without subjecting him to undue risk, not only laudable but necessary. It is the function of a medical journal to apply criticism of new ideas in such a manner that the profession, and through it the public, shall be safeguarded against risky procedures and false hopes. The busy practitioner has neither the leisure nor the opportunity to examine all the evidence available when a new cure of cancer is announced; but if a method of treatment that offers any serious prospect of efficacy is discovered, he should be enabled to apply it without loss of time and with the full knowledge of its action, its risks, and its limits of effectiveness. In dealing with a hitherto practically incurable disease, any new method of treatment must be accompanied with irrefutable proof, otherwise it cannot in the interest of the sufferers be accepted.

In the task of guiding the profession with regard to the so-called "cancer cures" Professor Zangemeister[1] has recently come to our assistance. In summing up the subject, the Königsberg professor says that if the matter be regarded critically we must come to the conclusion that no method has yet been suggested by which cancer can be cured with anything like the certainty of the knife. Improvements such as the modification of the growth of malignant tumours have been achieved by many and varied means. But although single cases of benefit from such means would suggest that cure could easily be obtained, more extended experience has proved this not to be the case.

There are three ways in which malignant disease might be cured. The first is the attempt to destroy the cancer cell. On theoretical grounds the difficulties in this direction lie in the fact that all agents so far discovered which exercise a deleterious action on the cancer cell exert a similar action on the normal cell, though it may be to a less extent. The means at our disposal at present include heat, cold, magnetic and electric waves, light, Roentgen and Becquerel rays, certain chemical substances, and a number of ferments. Of the physical means, radium has certainly produced the most marked results on superficial growths. Tesla currents (fulguration) are said by some to effect cures, but before this claim can be allowed more evidence must be forthcoming. Of the chemical bodies, arsenic, mercury, and other inorganic substances have been suggested. Zangemeister has tested the effect of injections of cholin, one of the organic compounds proposed, and states definitely that, although a certain amount of cell necrosis can be produced by its means, it does not exercise any curative effect. Of the ferments, he speaks chiefly of trypsin. The theoretical basis on which the trypsin treatment of cancer is built contains too many unknown factors to be accepted as sound. The results obtained in practice fall short of cure, and do not even hold out a promise of success in the future. He has nevertheless tested the effect of trypsin in a few

[1] *Deut. med. Woch.*, November 19th, 1908.

cases, and found that no beneficial effect whatever could be discerned. Further, he raises the question whether the injected trypsin in one of his cases did not so injure the nutrition of the cancer as to render it an easy prey to a streptococcal infection, of which the patient died. Apart from the disappointing experience at the bedside, it has recently been shown by Achalme, von Bergmann, Guleke, and Bamberg that injections of trypsin are immediately followed by the production of antitrypsin, so that an effect opposite to that aimed at is produced. The bile of oxen and other animals has also been tried with the same object, and, unfortunately, with the same negative result. As ineffective, in Zangemeister's opinion, are applications of nuclein and other drugs which produce leucocytosis. Bier's heterogeneous blood treatment has also not led to satisfactory results.

The second way of attacking the problem is to employ a medicament which shall have the effect of specifically dissolving the cancer cells. Cytolysins against carcinomatous cells have been produced by Schöne and others in mouse carcinoma. The difficulties in the way of applying this form of treatment in human disease depend on the uncertainty of the production of antibodies when heterogeneous antigens are employed. All the attempts in this direction have hitherto been unavailing, but the idea is not hopeless, and the future alone will show whether a passive immunization is not possible. Recently the author has attempted to use cancer cells of tumours removed from other patients, or even from the same patient, to overcome the heterogeneous nature of the antigen. The possibility of achieving success by immunizing monkeys has also been suggested, and must be followed out further.

The third way of dealing with the matter is by attempting to neutralize the products of the carcinomatous tissue. Apolant believed that the results obtained in mouse carcinoma by partial immunization, the type changing more and more to non-malignant adenoma, could be explained on the assumption that a gradual change occurred in the character of the cell owing to neutralization of the products. Many workers have determined that abnormal ferments exist in carcinoma. Neuberg considers that radium acts by destroying the cancer ferments. Hofbauer went so far as to suggest employing antitrypsin to inhibit ferment action generally. The weakness of this and similar theoretical forms of treatment depends on the impossibility of attacking cancer ferments alone without affecting the necessary ferments of the vital organs. A mass of hypotheses has been built up on these lines; but the groundwork is too insecure to pick out the sound from the imagined, and it is therefore premature even to hope that fruit will be borne on the branches of such a tree.

The conclusion of Zangemeister's discussion of a large number of proposals for the treatment of carcinoma is that up to the present no non-operative treatment of cancer has been devised which offers a patient a reasonable chance of cure. In other words, all the reputed cures have failed, and the investigators must continue to work before a cure can be found.

INSPECTOR-GENERAL JAMES PORTER, C.B., M.D., Director-General of the Medical Department of the Navy, has been appointed Honorary Physician to the King, in place of the late Inspector-General Sir J. W. Reid, K.C.B., M.D.

THE ANNUAL MEETING AT BELFAST.

AN inquiry has reached Belfast from an inland English county as to the possibility of visitors to the Annual Meeting having an opportunity of seeing the launch of one of the great steamships for which the shipyards of the city are famous. No doubt many others besides the member who made the inquiry will be interested to hear that the local executive has great hopes that such an opportunity may occur. A large vessel for the Orient Line is at present on the stocks in Messrs. Workman, Clark, and Co.'s yard, and is expected to be launched in July. The exact date cannot be settled so far ahead, but if the firm can make it coincide with the visit of the Association to Belfast they have courteously promised to do so. The Ulster Medical Society has arranged to present to the British Medical Association a cup, to be known as the "Belfast Cup," to be played for at Annual Meetings, and to be won out and out by any member winning it three times. It will be played for on the Friday of the Belfast Meeting, on the fine links of the County Down Club at Newcastle, co. Down, kindly lent for the day by the council and members of the club. The play will be by "bogey" score. The cup is designed after the famous Ardagh Cup, one of the finest examples of ancient Irish work, which is now in the Kildare Street Museum in Dublin. The original is composed of gold, silver, enamels, and jewels, and was, it is believed, meant for use as a chalice. The challenge cup will be of silver, about 9 in. high, with gilt panels and coloured enamel bosses; round it will be set stones representing the four provinces of Ireland—the black pebble for Leinster, the white or Carnmoney pebble for Ulster, the red stone for Munster, and the green Connemara marble for Connaught. The North of Ireland Cricket Club, the premier club of Ulster and one of the best in Ireland, has kindly offered to play a one-day match against a British Medical Association team. The beautifully turfed grounds of the club are only about five minutes' walk from Queen's College, where the Association will meet. The local executive will be very glad if some English cricketer will undertake to organize a team for the occasion; any one interested in the matter should communicate with one of the honorary local secretaries, whose addresses will be found in the SUPPLEMENT.

INSURANCE FOR MEDICAL MEN.

WITH a view to facilitating insurance by medical men against various risks, about two years ago a Medical Insurance Committee was formed to offer certain special advantages and concessions to medical men. Under an arrangement with the Guardian Assurance Company, Limited, an old-established office, policies of various kinds are issued, including the following: (*a*) Combined policy against fire, burglary, and the liability of the Workmen's Compensation Act in respect of servants; (*b*) liability of practitioners for accidents to persons employed in the practice; (*c*) personal accident and disease; (*d*) life assurance with or without profits, also endowment and partnership life assurance; (*e*) fidelity guarantee; (*f*) glass. A meeting of the committee to consider the annual statement of accounts for the year ending December 31st, 1908, was held last week, when it was reported that the life business had shown a marked and satisfactory improvement, and that there had been a steady increase in other directions, although in respect to employers' liability the improvement had not been so marked as had been anticipated, since it was largely owing to the provisions of the Workmen's Compensation Act, 1906, that the committee was constituted. When that Act became law it was at once perceived that its

provisions would affect medical men not only in the way in which all private members of the community were affected, but also in certain special directions in the exercise of their profession, and the committee, as has been said, insures medical men against liability for accident to persons employed in the practice. We believe that the terms offered by the committee are exceptionally advantageous; it is in a position to make an allowance of the nature of a bonus on the premiums, while the experience gained by the Secretary renders it possible to save the medical insurer a great deal of trouble. It is, we feel sure, desirable that the members of the medical profession both in town and country should more generally make provision against personal illness and accident. Experience proves that owing to exposure to infection and to inclement weather they are specially liable to certain types of disease which are apt to produce their incapacitating effects at that most inopportune moment when there is much sickness in the community. Further, whether he drives a horse-drawn vehicle or a motor car, or mounts the humbler motor or push-bicycle, the risk of personal accident can never be eliminated. Finally, there is probably no profession in which a man's earnings, and even his financial prospects, may be so seriously diminished by the enforced idleness caused by accident or illness. Further particulars can be obtained on application to Mr. Guy Elliston, Secretary, Medical Insurance Committee, 429, Strand, London, W.C.

THE EDUCATION OF MOTHERS.

A VERY novel legislative proposal, called the Necessitous Mothers (Assistance) Bill, was introduced by Mr. Robert Harcourt last week in the Commons. It proposes to empower local authorities to make provision for the assistance of necessitous women in contemplation of and after childbirth. The root idea of the bill is to reduce infant mortality by feeding, instructing, and supervising poor ignorant mothers. The bill is wholly permissive. The local authority can, if it likes, provide food, advice, or other assistance to a poor mother before and for six months after the birth of the child. As a condition for receiving help, it may insist on the mother nursing the child herself, or attending a class for instruction, or refraining from going to work. The municipal expenditure is limited to a penny rate. In an interesting article on the bill the *Manchester Guardian* points out that Mr. Harcourt's proposal is founded on experience gained at Ghent, where the infant mortality was very high on account of the mothers being mostly employed in the textile industry of that district. A local physician, Dr. Miele, started a school for mothers, where working-class women were given advice and instruction before and after confinement and encouraged to suckle their children. The municipality gave a grant of £60 a year to the work, and much good has resulted from the teaching that it is more useful to feed the mother and encourage her to suckle her child than to facilitate bottle feeding by the municipal supply of humanized milk. The Ghent idea was taken up a few years back in St. Pancras, and a school for mothers was founded. Dr. F. J. Sykes, the medical officer of health, earnestly supported the movement in face of the high infantile death-rate, and has had the satisfaction of seeing a great reduction in mortality from the crusade in favour of teaching and feeding the mothers and the encouragement of breast nursing. A similar movement is active in Manchester, but the expenditure is of necessity considerable, and it all falls at present on private philanthropy. Mr. Harcourt's bill would bring the municipality into the work, and we cannot conceive a more useful expenditure of public money than this attempt to educate mothers in their natural duties and thereby reduce the terribly high infantile death-rate of many industrial centres.

THE MICROBE OF TRACHOMA.

NEARLY two years ago Professor Greeff published a paper[1] in which he stated that, working with the ophthalmic surgeon Dr. Clausen, and the bacteriologist Professor Frosch, he had, in the cells and secretion of the mucous membranes attacked by trachoma, come across small bodies which might possibly be the causal parasites of the disease, though more evidence on the point was required. With the financial support of the Prussian Ministry of Education, he has been able to continue the work on a large scale, and now[2] definitely asserts that the bodies are the causal parasites of trachoma. The importance of such a discovery is evident, and although Professor Greeff warns readers not to draw too sweeping conclusions, and asks the medical world to work patiently for further evidence with regard to the nature of the bodies in question, it is only reasonable to look a little ahead, and to anticipate the direction which the development of this research must take. In Berlin, Posen, Königsberg, Westphalia, Austria, Japan, and Russia, workers have found the same structures in trachomatous mucous membranes and secretion, and in these alone, and Professor Greeff states that a very extensive series of conditions other than trachoma has been subjected to rigid examination, and in not a single case have these little round coccus-like bodies been found. Dr. Leber has found the granules in 90 per cent. of the trachoma cases he examined in Bovigno. With regard to the suggestion that the bodies are not parasites but protoplasm granules or other forms of cell degeneration, or even the precursors of goblet cells, Professor Greeff says that this was considered from every point of view by him and his colleagues, and was amply disproved. He does not give the evidence in detail, but from the description and the illustrations of the structures, such an explanation does not appeal to the critic as probable. The structures are minute slightly ovoid bodies, considerably smaller than the smallest of the known cocci. At first these bodies are seen sparsely scattered in the protoplasm of the epithelial cells. They are surrounded by a distinct areola, and tend to group themselves in pairs. In the next stage they are seen bordering on the nucleus of the cell, and are accompanied by a sort of flake of protoplasm, not unlike von Prowazek's fibrin masses. When followed a stage further, collections or heaps of the bodies are seen. At first, these heaps are surrounded by a pale zone; later, this "mantle," as he terms it, disappears; lastly, the heaps burst through the mantle, and the small bodies escape into the surrounding cells or secretion. The structures are most easily recognized in the "heap" form. It is not easy, however, to demonstrate them until practice and patience have taught the observer how the specimens are best prepared. The staining is carried out by Giemsa's solutions, according to the following formula: (1) 12 parts of Giemsa's eosin solution (2.5 c.cm. of a 1 per cent. French solution of eosin in 500 c.cm. of water); (2) 3 parts of Azure I (1 in 1,000); and (3) 3 parts of Azure II (0.8 in 1,000). The secretion, together with some epithelial cells, are removed from the conjunctiva by means of some suitable instrument and spread thinly on slides. After drying in the air, the films are fixed for twenty to thirty minutes in absolute alcohol. They are then

[1] *Berl. klin. Woch.*, June, 1907.
[2] *Deut. med. Woch.*, March 25th, 1909.

stained for six to nine hours at 37° C. in the solution, washed with distilled water, dried carefully with filter paper, and mounted in cedar oil. The same bodies have been described independently by Halberstädter and Prowazek, and these observers have confirmed the observations of Greeff and his co-workers. That, after a long search, the parasites should be found by two sets of independent observers simultaneously is not strange, since these bodies have been rendered recognizable by improved microscopical and bacteriological technique which is common property. One more fact is brought out in the article of Professor Greeff. After treatment with copper sulphate, long before the trachoma can be said to be cured, the bodies disappear from the superficial cells and secretion. Greeff suggests that they disappear into the deeper layers, where they are still capable of existing and giving rise to pathological changes. Culture of the parasites and reproduction of the disease still remain to be accomplished. We have therefore to determine whether the frequent—in fact, almost regular—occurrence of the bodies in trachoma cases, and apparently in these cases alone, can be accepted as sufficient evidence in support of a causal connexion.

NICOTINE AND TOBACCO.

AT one time doubt was thrown upon the assumption that the characteristic effects of smoking were produced by the nicotine of the tobacco, but it seems now to be fairly well established that the nicotine is at any rate by far the most important constituent of tobacco smoke from the medical point of view, and it has, therefore, seemed worth while to analyse various smoking tobaccos, cigars, and cigarettes in common use in order to ascertain the percentage of nicotine in each. Speaking quite generally, it will be found that the judgement of a smoker as to whether the tobacco, cigar, or cigarette was mild or strong agrees very closely with the results of analysis; the agreement in the case of pipe-tobacco is, in fact, absolute. In the case of cigars, one called mild contained an appreciably larger proportion of nicotine than another, called strongest; but a third, also called mild, contained the smallest proportion of nicotine found in any tobacco examined except a German patent "non-nicotinic" cigar, which contained little more than half the ordinary quantity in a mild Havana. The results of analyses of cigarettes are a little surprising, inasmuch as a Virginian of good quality proved to contain nearly twice as much nicotine as an Egyptian, and a common Virginian cigarette sold at five a penny, though it yielded less nicotine than a superior Virginian, contained a good deal more than either the Turkish or Egyptian cigarette. In comparing the effects of smoking pipes, cigars, and cigarettes, however, other factors besides the amount of nicotine present must be taken into consideration. When a pipe, cigar, or cigarette is first started, the smoke undergoes filtration in passing through the unburnt portion of the tobacco, and, in the case of a pipe, through the stem; as smoking proceeds, the percentage of nicotine in the shortening end of the cigar or cigarette must be much increased, and, when a holder is not used, this portion is in contact with the lips, and it is likely that some nicotine is absorbed directly in this way; whereas, with a pipe, filtration through the stem may, perhaps, become more efficient as smoking proceeds, as the smoke has to pass through a larger quantity of moisture; but it is not possible to say how far this advantage may be counterbalanced by the presence of an accumulation of nicotine from previous smoking of the same pipe. While habits, no doubt, vary as to the point at which a cigar or cigarette end is thrown away, it is probably safe to assume that the end of a cigarette is usually a much larger proportion of the whole than is the end of a cigar, or of a pipe. The rate of smoking, too, is liable to vary, and it will probably be found that habitual and heavy smokers are considerably slower smokers than those who use tobacco less frequently. The weights of the cigars analysed varied from 60 to 100 grains; the five-a-penny cigarettes weighed 15 grains each, and the others about 21 grains each (without the paper); an average-sized briar pipe, filled with an ordinary smoking mixture, was found to hold about 75 grains. Observations on the time taken in the different forms of smoking showed that the same individual—a regular moderate smoker—took about fifty minutes for an average full-sized cigar, fifty minutes for a pipe, and twelve minutes for an ordinary cigarette. Taking the mild cigars, the mild tobacco, and the Egyptian cigarettes, and supposing four of the latter to be smoked in fifty minutes, the amounts of nicotine would be: Cigar, 0.9 grain; pipe, 1.1 grains; cigarettes, 0.9 grain. But, as already pointed out, it by no means follows that the amounts taken into the system would be in the same ratio as these numbers.

TUBERCULIN IN OCULAR DISEASE.

THERE can be now little doubt that certain ocular diseases present in so-called strumous individuals are often tuberculous in origin; among them may be included many cases of phlyctenular conjunctivitis, scleritis, and chronic irido-cyclitis. Many patients who present the typical ocular picture of interstitial keratitis associated with uveitis, but have not the other stigmata of congenital syphilis, are, there is good reason to believe, suffering from a tuberculous affection of the eye. It is unnecessary to assume the presence of actual bacilli; they are not found in phlyctenulae, nor do phlyctenulae often set up tuberculosis if introduced into a guinea-pig; the presence of tuberculo-toxin in the blood is sufficient to give rise to the lesions in the eye. This is quite obvious, for phlyctenulae frequently appear when tuberculin is placed in the conjunctival sac of a susceptible individual. The effect of appropriate tuberculin treatment is often so very encouraging that no effort should be spared to arrive at a correct diagnosis. This can only be done by the expert use of tuberculin. Derby and Török[1] have given most explicit directions for the use of tuberculin, both as a diagnostic and therapeutic agent. The first author states also that his experiences with the skin reaction of von Pirquet have been highly satisfactory. The papers should be read by all who wish to realize fully how common tuberculous eye disease is, and how best to treat it. A very interesting account, illustrated by two beautiful coloured plates of tuberculosis of the fundus oculi, has been published by Kraus and Brüchner in the same periodical. In the two cases described test injections of tuberculin caused marked alterations in the fundus picture and rendered the diagnosis certain.

TOO OLD AT FORTY-FIVE.

THE voluntary retirement of the public vaccinator a few months ago created a vacancy in the Hounslow district. In their advertisement for candidates to fill this post the guardians of the Brentford union inserted a clause fixing an age-limit of 45 years for applicants. This imposes a penalty for being in the prime of life and medical experience, for which we see no justification. A petition was addressed to the guardians by local practitioners, pointing out that the restriction would debar nearly every medical man practising in the district, and asking the guardians to

[1] *Archives of Ophthalmology*, September, 1908.

reconsider their decision. It was urged that the stipulation was unusual and unjust. To this petition the guardians replied that they were unable to alter the terms of the advertisement. An effort was also made to obtain the opinion of the Local Government Board by means of a letter addressed to the Secretary. This elicited a mere official acknowledgement of the letter. The matter was regarded by the local practitioners as a grievance. Two applicants withdrew, but the third declined to support the action of the local profession, and was elected to the post. Where united action is called for, success can be achieved only by unselfish loyalty on the part of every practitioner. The promotion of the social side of the life of the Divisions of the British Medical Association is doing much in the direction of securing more of this spirit of loyalty. In this way the chief hindrance will be surmounted to the removal of hardships and the establishment of just and equitable terms and conditions of service. On the question of age, there can be no doubt that boards of guardians have to some extent taken fright owing to the adoption of the Superannuation Act for district medical officers. Where too much regard is given to this, to the exclusion of other and more important considerations, false economy may be secured and efficiency sacrificed. The fallacy of too old at 45, adopted by the Brentford guardians, is not capable of explanation on this score, as public vaccinators are not entitled to superannuation. It may be, however, that the guardians in this union anticipate an early change by the authorities in the direction of superannuation for public vaccinators, and are anxious to take timely measures to safeguard themselves against the liability that would be created by such a contingency.

LORD LISTER.

LORD LISTER completed his 82nd year on April 5th. Though recognition of the value of his work did not come quickly, his name now marks an epoch in the history of surgery of which it may truly be said that there is *nil simile aut secundum*. His collected papers and addresses will shortly be issued in two volumes by the Clarendon Press. The profession throughout the world will join in wishing increased length of days and happiness to the man who has been the means of saving more human lives than have been destroyed by all the conquerors that have been the scourge of mankind. There is, moreover, this vital difference between his work and theirs—that its beneficent action will continue, ever extending its area, as long as civilization lasts.

CENTENARY OF OLIVER WENDELL HOLMES.

THE hundredth anniversary of the birth of Oliver Wendell Holmes falls, like that of so many other famous men, this year. He was born on August 29th, 1809, but the Historical Society of Cambridge, Massachusetts, where he was born and where he lived during his early manhood, proposes to celebrate the event somewhat earlier. To this it will devote its regular spring meeting, which occurs on April 27th next. Dr. Charles W. Eliot, President of the University, will preside, and other speakers will be: Dr. Edward Waldo Emerson of Concord, son of Ralph Waldo Emerson, and an associate of Dr. Holmes in the famous Saturday Club; Colonel Thomas Wentworth Higginson, an intimate friend of Dr. Holmes; Dr. David Williams Cheever, who was his assistant when he was Professor of Anatomy in the Harvard Medical School; and the Rev. Samuel M. Crothers, D.D., of Cambridge, described by Mr. Frank Gaylord Cook, secretary of the society, as "one of our foremost humorists." Several selections will be sung by the Harvard Glee Club, and Mr. Charles Townsend Copeland, instructor of elocution in the university, will read two poems by Dr. Holmes—namely, "The Last Leaf" and "The Chambered Nautilus." The celebration is in honour of Holmes in his poetical literary character; but the medical profession will not forget—what he himself never forgot—that he was one of our body. It may be that he was as proud of having written "The Chambered Nautilus" as he was of having called attention to the contagiousness of puerperal fever. Fine as much of his literary work is, however, we think that his most enduring title to fame is the service he did mankind by that famous essay.

BERLIN PROFESSORS AND RUSSIAN PATIENTS.

A FEW days ago the daily papers reported under "scare" headlines that a gross violation of medical ethics on the part of certain professors in Berlin had been brought to light in a libel action. Since the charges made have not yet been proved, and since these charges rest so far on the evidence of a few witnesses, we must content ourselves with briefly stating what has happened, deferring all discussion of the position until the investigation which is being made has brought the facts fully to light. It appears that a Dr. Levin accused Professor Moll of bribing certain persons to induce rich Russian patients to place themselves in his hands. The latter instituted a libel suit, and obtained a nominal verdict with 30s. damages, while the judge stated that evidence on oath had revealed that it was the practice of certain professors to pay money to third parties for bringing them patients. Among those implicated is Geheim-medizinal-rat Professor Senator, who is President of the Berlin Medical Society. On learning of the charges he at once resigned his presidency and demanded a full inquiry into the charges. Rumours have long been current in Berlin that some consultants have been guilty of the practice referred to, but the matter has now for the first time been sworn to in open court. We can only express the hope that men holding a prominent position like those whose names have been mentioned in the press, will have little difficulty in dispersing the cloud which threatens to burst over the consulting quarter of the capital of the German Empire.

MEMORIALS of great men are not always suitable, the worst, of all, we think, being the useless and too often inartistic statue. An instance of a peculiarly appropriate mode of commemorating a man who rendered service to his fellow men is the institution for surgical research which it is proposed to endow in memory of Dr. William T. Bull, of New York, an obituary notice of whom appeared in the JOURNAL of March 27th. The institution will be connected with the College of Physicians and Surgeons, Columbia University, where Dr. Bull took his degree in 1872, and where he was for many years professor of surgery. It is further stated that Mrs. Bull proposes to erect a memorial hospital for the treatment of tuberculosis.

THE National Association for the Prevention of Consumption has arranged to hold a tuberculosis exhibition at the Art Gallery, High Street, Whitechapel, in June. The exhibition will illustrate the extent, cause, spread, prevention, and cure of tuberculosis, and will have a special section devoted to tuberculosis in children. It is expected that the exhibitien will be opened by the President of the Local Government Board on June 2nd, and it is proposed that after it has been shown in London it should be taken to various provincial cities and towns in England. Further particulars can be obtained on application to Dr. H. Hammond-Smith, 20, Hanover Square, London, W.

Medical Notes in Parliament.

The Housing and Town Planning Bill came on for second reading on Monday, and gave rise to a very interesting debate.

Mr. Burns, in moving the second reading, gave a short history of the fortunes of the Bill last year, and said it had now been introduced according to the pledge of the Government in the shape in which it had passed the Standing Committee last session. The points raised on the notice paper did not touch the principle of the Bill, and as regards commons and open spaces there was no desire to attack or filch them for the purpose of erecting working men's dwellings. The Bill made Part 3 of the Act of 1890 compulsory instead of adoptive, and gave increased facilities for acquiring land for housing the working classes. It strengthened the law for closing orders, and threw upon the landlord the responsibility of keeping the house reasonably fit for living in. It dealt with town planning in a liberal and comprehensive spirit, and in the third portion of the measure medical officers of health were dealt with. There were sixty-two county councils in England and Wales, and up to recently only half of them had medical officers. He did not think that this country, which, for the last hundred years, had led the world in public sanitation, should remain longer under the reproach of not having in every county of England and Wales a whole-time medical officer. And they had decided that every county council should have a whole-time medical officer, devoting all his abilities and services to public health and sanitation. Bearing in mind the special provisions of this bill, this in itself, especially when the terms and conditions under which the medical officer serves are to be approved by the Local Government Board, should give some satisfaction to the members of a useful and honourable profession, which has a right to be protected against, at times, the capricious local interference which prevents them from doing their duty to the body politic as well as they otherwise ought to be allowed to do it. After referring to the abolition of cellar dwellings, he spoke of back-to-back houses, and said where they prevailed we had this remarkable result: Whereas the average age at death of the gentlemen and the professional classes was 44, amongst the tradesmen it was 27, and amongst operative labourers and their families it was 19; that is, 44 as against 19. His medical advisers advised him that the back-to-back houses were responsible in the day of this report for a death-rate of 431 per 1,000 over the town as a whole, and an infant mortality of 570 per 1,000 of children under 5 years of age. It was represented to him, on the responsibility of Dr. Tatham, Dr. Niven, and Dr. Sykes, and other well-known medical men, that where all causes were responsible for 27 per 1,000 of deaths, it was 38, and not 27, in back-to-back houses; infectious diseases were 4.5 in through-ventilated houses and 8.7 in back-to-back houses; consumption stood at 2.8 in through-ventilated houses and 5.2 in back-to-back houses. In the ordinary houses occupied by the labouring classes in regard to lung complaints the percentage was 6.6 in through-ventilated houses and 9.2 in back-to-back houses. Where the children die from diarrhoea it was 1.4 in through-ventilated houses and 3.4 in back-to-back houses. In a town that had recently expressed its desire to be allowed to continue these back-to-back houses, he found this very suggestive comment made by one of the best authorities on housing (Mr. Dewsnup) in one of the best books on the subject recently written. He said, speaking of Leeds back-to-back houses:

> Newly built the houses may look attractive, but what will be their condition after years of wear and tear? More than a probability that the conclusion of Manchester will be re-justified.

England was not so destitute of land upon which to house its poor that they should be housed in working-class tenements without a back yard in which to chop the wood and put the coal, and in which the children could play whilst the mother was able to keep a friendly eye on them through the washhouse window, and at the same time continue to carry on her domestic duties. All this was impossible in back-to-back houses, where the children had only got a stuffy room for a playground; and in the days of rapid traction they had no right to relegate children to play in a small front garden, or in the road or street, when the community was rich enough to provide the humblest garden in the majority of cases, and some measure of a back yard in which the youngsters could play whilst the domestic duties in the house were being carried out. This could be done better in through-ventilated houses with a back yard and a garden than was possible in the case of back-to-back houses.

Mr. Lyttelton followed in support of the second reading of the bill, which he criticized in a friendly spirit. He especially objected to the clause which provides for a quinquennial census of all houses as expensive and unnecessary. He doubted the fairness of the bill as regards compensation to landowners for land to be taken for housing purposes, and he concluded by pointing out with much force that if the bill was to be properly worked a large additional staff would be necessary at the Local Government Board.

Sir Walter Foster followed, and strongly supported the suggestion that the bill would require the Local Government Board to be largely reinforced, so that the work of inspection in the counties could be efficiently carried out. He could not, however, agree with the opposition to the quinquennial census of houses in all districts. He had some small share in inserting the clause in the bill, and he regarded it as a most valuable provision for educating public opinion by a publication of the facts concerning every district. It was true that powers of inspection existed in another clause; but hitherto such powers had been very imperfectly carried out, and there was a vast difference between a simple inspection and a published record accessible to every one of the results of the inspection of every house. It would not only educate the locality but would be invaluable to the county council if that body had to interfere in case of local default. As regards the powers of forcing small local authorities to do their duty, he had great confidence in the county councils; he believed they would supervise their whole areas and stimulate district councils to take up this work. As regards the powers resting ultimately with the Local Government Board, he had less faith in the mandamus than many people. It generally proved a feeble weapon, but inspection from the central authority would do much good. One of the best things in the bill was the compulsory appointment of a medical officer of health for every county. With reference to housing, the very root of all power to act was in the interests of public health. It was the only logical basis for interference with private property. Bad housing increased the death-rate, and the county medical officer would be always anxious to improve this in order that record of his work might appear good. Under the bill medical experts, assisted by sanitary inspectors, would look after not only the rural, but the neglected urban parts of the county, and in time search out and improve every black spot. These county medical officers could do their work fearlessly, for they were given a position of security which every health officer ought to have. The bill provided that they were not to be dismissed except with the consent of the Local Government Board. One of the great difficulties in this country on this question had been the system of allowing medical officers of health for small areas to receive £10, £20, or £30 a year, and be appointed annually by small local authorities. They had heavy work to do, and if these men could be given a security of tenure much good would result. Take a case in point—a small town, say, of 10,000 inhabitants. It had an urban district council. A medical officer of health was appointed at a salary of £25 or £30 a year. He did what he could to improve the sanitary condition of the district, but at the end of twelve months he was dropped. Why? Because he had been a little too zealous. He knew, and the President of the Local Government Board knew, cases in which men, after twelve months' active service in connexion with the housing of the people, were not reappointed by the district councils, and were dropped because they did their best to bring about a better state of things in the poorer districts. That was a scandal which ought to be removed. It could be removed if the Local Government Board would give the right of appeal on the part of these medical officers to itself. Even in watering places of 15,000 or 20,000 inhabitants men were dismissed

for being too active in looking after the public health. These men should be made independent in their very difficult and serious duties, so that they might look thoroughly after the habitations of the poor.

The debate was continued by Mr. Lane Fox, who moved an amendment (afterwards rejected) to prevent the cost of housing falling on local rates, as it should be a national burden. Mr. Hicks Beach, Sir J. Dickson Poynder, and others spoke, and finally, after a conciliatory reply from Mr. Masterman, the bill was read a second time, and referred to a Committee of the whole House.

Public Health Acts (Consolidation).—In answer to Mr. Rees, the President of the Local Government Board said last week that he appreciated the advantages there would be in consolidating the Public Health Acts, though it would probably be found necessary in the first instance to amend them in some respects. He should be glad to take steps in the direction indicated when opportunity offered, but he did not think it would be practicable to deal with the matter during the present session.

The Local Government (Scotland) Bill has been again introduced by Mr. Cathcart Wason. It proposes to protect outdoor medical officers in Scotland from arbitrary dismissal by parish councils by giving them the same position as their English and Irish brethren in a right of appeal to the Local Government Board. The bill is influentially backed on both sides of the House.

The Asylum Officers' Superannuation Bill.—Late on Thursday night last week this bill passed its second reading without discussion, and on the motion of Sir William Collins was referred to a Select Committee. Its prospects will now depend on how it fares before the Select Committee, which will probably also have the Scottish bill for the same object before it, but it is quite possible both bills may pass this session.

The Oaths Bill has passed through the Standing Committee, and now has every prospect of becoming law. It has been strengthened in Committee, and every oath is to be administered as prescribed by the bill in the Schedule, which reads as follows:

> The officer administering the oath shall address the person taking the oath in the following form: "You swear by Almighty God that," and then proceed with the words of the oath prescribed by law, omitting any further words of imprecation or calling to witness; and the person taking the oath shall, with uplifted hand, say "I do."
>
> If the oath is an oath which is customarily taken by the words of the oath being read or repeated after the officer administering it, the words shall be read or repeated with uplifted hand in the form following: "I do swear by Almighty God that," and then proceed with the words of the oath prescribed by law, omitting any further words of imprecation or calling to witness.

New Bills.—Several new bills have been recently introduced which are of medical interest. First may be mentioned Mr. Dickinson's Metropolitan Sewers and Drains Bill, which seeks to amend the law relating to combined drainage. There are two kinds of combined drain—the "combined drain" which in law is a "drain," and the "combined drain" which in law is a "sewer." The former is repairable by the private owner, the latter by the public authority. The consequence has been great confusion in the interpretation of the law, and this bill seeks to remove it, and give the metropolitan local authorities the same powers that have already been given to several provincial authorities. The Registration of Nurses (Scotland) Bill, introduced by Mr. Cleland, seeks to establish and make regulations to provide a register for nurses in Scotland. It is drawn on the same lines as the bill of Mr. Munro Ferguson for England. Sir John Jardine has introduced a bill to provide for the grant of superannuation allowances to officers and servants of public and district asylums in Scotland. Lord Robert Cecil keeps up his interest in infant life protection, and has presented a bill to prevent the destruction of children during birth. The Local Education Authorities (Medical Treatment) Bill, introduced by Mr. Walter Guinness, proposes to provide for the recovery by local education authorities of costs for medical treatment of children attending public elementary schools in England and Wales. In the Lords the Bishop of Hereford has introduced a Bill to prevent Cruelty to Animals. It has nothing to do with vivisection, but seeks to make it an offence to hunt, shoot, or course an animal which has been kept in confinement and is released for such spurious sport.

Escapes from Asylums.—Mr. Chiozza Money asked the Home Secretary how many imbeciles and lunatics had escaped from public asylums in the United Kingdom since January 1st, 1909. Mr. Gladstone said that the Commissioners in Lunacy informed him that there had been 67 escapes from asylums in England and Wales this year. He was not in possession of the figures for Scotland and Ireland. In reply to a further question he answered that a report from the Commissioners in Lunacy of an inquiry which, at his request, they had made into the escapes of lunatics from the asylums in the neighbourhood of Epsom, and matters connected with the supervision of patients both within and beyond the asylum boundaries, had been recently presented to Parliament; it gave also the views of the Commissioners, with which he concurred, on the general question of exercising patients outside asylum boundaries.

Vaccination (Exemption Certificates).—In reply to Mr. Armitage, the President of the Local Government Board stated last week that the total number of certificates of conscientious objection received by the vaccination officers in 1907 was 57,671. The returns for 1908 were not quite complete, but the total number of certificates and statutory declarations with respect to conscientious objection received by the vaccination officers during that year might be stated approximately as 163,000.

Deaths from Burns and Overlying.—In answer to Mr. Alfred King, the Home Secretary stated last week that a supplementary table giving the number of inquests held in cases where death was caused by burns and scalds was inserted in the Criminal Statistics for 1904. In that year, according to this table, the deaths from burns at unprotected grates and stoves numbered 988, while the deaths from scalds at unprotected grates and stoves numbered 134. These were distributed between the County of London and the rest of England and Wales, as follows:

	Burns.	Scalds.
County and City of London ...	104	20
Elsewhere in England and Wales ...	884	114
Total	988	134

The great majority were children, but the exact numbers could not be given. No later figures had been collected. The following were the deaths of infants caused by overlying in the last three years for which figures were available:

	1905.	1906.	1907.
County and City of London ...	405	335	344
Remainder of England and Wales	1,060	1,118	1,129
Total	1,465	1,453	1,473

The 1908 figures were not yet ready.

Uncertificated Deaths in the Highlands.—Last week, in answer to Mr. Weir, the Lord Advocate stated that the number of uncertificated deaths in the Highland crofting counties was as follows:

County.	1903.	1904.	1905.	1906.	1907.
Shetland	156	126	123	86	100
Orkney	52	55	39	49	46
Caithness	45	41	41	34	44
Sutherland	92	72	90	81	98
Ross and Cromarty...	327	298	304	293	307
Inverness	337	279	258	251	261
Argyll	137	99	82	93	100

Easter Holidays.—The House of Commons on rising on Wednesday adjourned till Monday, April 19th.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

WOMEN STUDENTS AT ST. ANDREWS.

A SIGNIFICANT fact in connexion with the graduation ceremony at St. Andrews University on March 31st was the number of women students who received the degree of Master of Arts—out of 50 graduates 38 were women. In connexion with this matter, at a meeting of the general council of the university held on April 1st, a communication was received from the Students' Representative Council regarding the relative number of men and women students. It was pointed out that whereas the number of women students was rapidly increasing in the four universities of Scotland, and without as yet any indication of slackening in the rate, the number of men students, while also growing, was growing very slowly. This great increase in the number of women students was confined almost entirely to the Arts Faculties in the universities, in which they now formed 46 per cent. of the total number of students. These facts had peculiar significance to St. Andrews University, not only because its strength was in its Arts Faculty, but also because the proportion of women students in that faculty was much higher than in the Arts Faculties of any of the other three universities, forming 61 per cent. of the whole. The report proceeded to point out that this extremely high percentage of women was a possible source of danger in the near future to St. Andrews University, and it was therefore advisable to avoid that danger by keeping the percentage of men students as far as possible above that of women. The report recommended that St. Andrews University might, as a corrective, turn its attention to the development of its science and medical schools, and also encourage the department of military subjects.

GRANTS TO SCOTTISH UNIVERSITIES.

The Treasury has appointed a committee to consider the statement of claims to additional State assistance submitted by the Scottish universities, and to report what assistance, if any, should be granted from public funds in the interests of the development of the work of the universities, with due regard to the co-ordination of their work with that of other institutions in Scotland giving instruction of a university standard. The committee is composed as follows: The Right Honourable the Earl of Elgin and Kincardine, K.G. (Chairman); Miss Haldane; Sir Kenelm Digby, G.C.B., K.C.; Principal Sir Harry Reichel, LL.D.; Mr. Charles Mackinnon Douglas; Professor Andrew Russell Forsyth, Sc.D., F.R.S.; and Professor G. Sims Woodhead, M.D. Mr. Hubert Warre Cornish will act as secretary to the committee.

THE GLASGOW ROYAL INFIRMARY SCHEME.

For some time there has been little news about the course of the negotiations to found new university chairs at the Royal Infirmary. Last week some remarks made by the President of the St. Mungo's College at the half-yearly meeting indicated that considerable progress has been made. He was able to state that the negotiations between the college and the university were so far completed that the governors of St. Mungo's College had been able to instruct their Parliamentary solicitors to proceed with a draft provisional order which will, in due time, be submitted along with similar orders from the university, and, it is believed, also from the Muirhead trustees. The university authorities do not seem to be quite so far advanced as the St. Mungo governors, but it is understood that there is now little doubt that the proposed scheme for instituting chairs at the Royal Infirmary will eventually be adopted after it has been in turn submitted to the discussion of the Medical Faculty, and then to the Senate. Owing to the prospect of a new Chair of Pathology being instituted in the Royal Infirmary, more than ordinary interest is attached to the filling up of the vacant post of pathologist. It is understood that the infirmary directors will reserve to themselves the power of revising the appointment on the institution of the new chair. As some of the strongest likely candidates for the chair are applying for the present vacancy of pathologist, it is felt that the successful candidate will stand a very good chance of eventually becoming the new professor.

GLASGOW WESTERN INFIRMARY.

Last week the managers of the Western Infirmary appointed Dr. J. Carslaw and Dr. J. S. McKendrick assistant physicians to the hospital. In connexion with these appointments an innovation was made, as these appointments are for ten years. In this way promotion will be accelerated.

NOTIFICATION OF BIRTHS IN GLASGOW.

In a report to the Health Committee of Glasgow Corporation Dr. A. K. Chalmers makes some interesting points. During 1908, out of 23,733 births, 86.3 per cent. were notified. The smallest proportion of notifications was in the Kelvinside Ward (63.3 per cent.), while in Cowcaddens Ward the maximum ratio of 99.3 per cent. was obtained. In eight other wards the percentage of notifications was also over 90 per cent. of the births; in five wards it was between 80 and 90, and only in two wards below 70. Of the 20,485 births notified, 45 per cent. were attended by medical men, while 55 per cent. were attended by midwives or handy women. The lowest proportion (24.3 per cent.) of medically attended births was found in the Cowcaddens Ward, and in two other wards the proportion was below 30 per cent. Using the notifications, it was for the first time possible to compare on a fairly reliable basis the incidence of puerperal fever in medically and non-medically attended cases. Of the 117 cases recorded, 32 had been attended by medical men and 85 by midwives, corresponding to a rate of 3.4 per 1,000 births attended medically, and 7.5 per 1,000 of those births attended otherwise.

MEDICAL EXAMINATION OF SCHOOL CHILDREN.

The Scottish Education Department has issued a memorandum, with a covering letter, on the subject of the medical examination and supervision of school children. The memorandum draws the attention of school boards to the principal provisions of the Education (Scotland) Act, 1908, as regards medical inspection of children, and urges them to proceed at once to the elaboration of a scheme that shall be as near as possible uniform. The department regard it as fundamental that the proposals should provide for the appointment of a single responsible inspecting officer, presumably a holder of the Diploma of Public Health, who should not be a private practitioner, and who should be furnished with as much assistance as may be necessary to enable him to perform his duties satisfactorily. Judging from the experience of England, it is obvious that in ordinary circumstances the assistants of the school medical officer ought to be, like himself, specialists, expressly debarred from engaging in private practice. Apart from other considerations, it is easy to foresee that complications may arise, in the event, almost inevitable in a populous district, of one medical practitioner being called on to examine his brother practitioner's patients. The whole-time medical inspector would be only necessary in the large towns, such as Edinburgh, Glasgow, Dundee, Aberdeen, and Leith. Elsewhere the ideal just described must be kept no less steadily in view, and a system of grouping adopted. Normally each county, along with the towns and villages not otherwise provided for, will be regarded as a single area, to be placed under the charge of a single responsible officer, who will be assisted to such an extent as may prove to be necessary. In some rural parishes it may conceivably be found practicable in the absence of conflicting interests to utilize the services of the local practitioner as assistant. There are districts in which the employment of nurses will be almost indispensable to success, and it should be understood that their employment generally is favoured by the department, although it does not for the present seem necessary to stipulate that they shall form an integral part of the scheme in all cases. The department considers that in certain parts of Scotland, notably in the Highlands, the scattered character of the population and the difficulty of communication may render it difficult to institute in the immediate future a comprehensive system of medical inspection, and in certain cases, a committee may deem it prudent to refrain from formulating a scheme until it can draw upon the experience of committees dealing with populous districts.

Ireland.

[From Our Special Correspondents.]

An Interesting Appointment.

His Excellency the Lord Lieutenant has appointed Miss M. A. MacDonnell, R.R.C., to be a member of the Board of Superintendence of Dublin Hospitals. The function of this body, under Act of Parliament, is to inspect and report upon the various hospitals which receive aid from the parliamentary grant. Miss MacDonnell has just resigned her position as Lady Superintendent of the Richmond Hospital after twenty-one years' service, and has received from the sisters and nurses an illuminated address and a handsome gift. She served in the South African war as matron of the Irish Hospital—500 beds—and received from the King the Order of the Royal Red Cross. She is the first lady member of the Board of Superintendence, and the appointment will be universally approved, not only on personal grounds, but because of the precedent established.

Proposed Enlargement of Belfast Ophthalmic Hospital.

The annual meeting of this hospital was held at the institution on March 29th. Dr. Cecil Shaw, honorary secretary to the surgical staff, read the medical report for the year, which showed a large amount of operative and general work, and increasing popularity of the institution. The surgical staff again pressed for the comparatively modest sum of £500 to bring the theatre and wards up to date. Dr. J. Walton Browne, senior surgeon, said they could not refuse admission to some urgent cases without jeopardizing the eyesight and hearing of the applicants. He had himself raised about £100 of the sum required, so deeply impressed was he with the gravity of further delay. An apology was received from Earl Shaftesbury, the president, for his unavoidable absence, and he also expressed his sympathy with the movement.

Salaries of Belfast Corporation Officials.

On the resignation of Sir Samuel Black, the ex-Town Clerk and Solicitor to the Corporation, a retiring allowance of £2,000 a year was granted. The post has now been divided and a new Town Clerk (Mr. Meyer), at £1,000 a year, has been appointed, and the post of Town Solicitor, also at £1,000 a year, created. Large as these sums may appear, few, if any, will grudge Sir Samuel Black his well-earned pension, or Mr. Meyer, one of the most popular and able of officials, his well-earned promotion. The humour of the situation is that a few years ago the City Council refused to allow the new medical officer of health a higher salary than £600 a year, although most citizens and an association whose duty is to promote civic economy, advocated £800 to attract first-class applicants for the post.

The Women's National Health Association of Ireland.

Her Excellency the Countess of Aberdeen inaugurated yet another branch of this popular and energetic Association on March 24th, at Tandragee, co. Armagh. There was a large attendance, and Sir John Byers, M.D., in moving a resolution in support of the Association, gave an admirable address on tuberculosis from the point of view of the farmer. Dr. Taylor, of Tandragee, cordially supported the formation of the branch.

England and Wales.

[From our Special Correspondents.]

MANCHESTER AND DISTRICT.

Limitation in Medical Inspection of School Children.

The announcement that the Board of Education has sanctioned a scheme for London under which only abnormal children will as a general rule be medically examined will doubtlessly lead to application for similar sanction in Lancashire. Several medical officers of health in Lancashire have freely expressed the opinion that it would be a waste of public money to insist on a full examination of all children in elementary schools, and as a matter of fact only a few authorities are attempting it. The statement that in London it would cost 5s. a child for full inspection of every case, and that the cost would be reduced to only a few pence a head on an all-round calculation if only abnormal cases are examined, will go far in the overrated Lancashire towns to restrict the scope of examination. The question, however, arises, How will the children for examination be chosen? Will only those with perfectly obvious defects be picked out for fuller examination? If so, many cases which really need medical attention will be overlooked. Or will the teachers be expected to make a preliminary examination and to pick out those needing full medical examination? Opinion as to the advisability of imposing such duties on the teachers is nearly equally divided in the Manchester and Salford Divisions of the British Medical Association. On the one hand, it is said that a short course of instruction to teachers in the early symptoms of the common diseases of childhood would be useful in many ways. With this knowledge they would often be able to detect defectives and put them aside for examination by the medical inspector, and would save the time of the inspector and the consequent cost to the rates. On the other hand, it is argued that to add to the already onerous duties of teachers is inadvisable, and that it is not fair to put on them the responsibility of detecting diseases which if not attended to in an early stage may be more serious. It is evident, too, that there is a similar difference of opinion among the education authorities. In some of the schools near Manchester the teachers are supplied with Snellen's test cards, and are instructed how to make rough tests for myopia and hypermetropia. In other schools they do nothing but point out those suffering from ringworm, scabies, or pediculosis. What is generally being done is that the teachers point out the obvious cases needing attention, and the inspector gives a rapid glance round the classes, and picks out a few children for further examination. This is useful as far as it goes, but it cannot be said to be an ideal system of medical inspection.

Treatment of Consumption in Manchester.

Some idea can be formed as to the extent to which consumption prevails in Manchester from the report presented at the annual meeting of the supporters of the Manchester Hospital for Consumption and Diseases of the Throat and Chest. The meeting was held in the Lord Mayor's parlour, Manchester, and was presided over by Mr. W. J. Crossley, M.P. The Chairman pointed out that in connexion with the out-patient department in Hardman Street, Manchester, the institution possessed a hospital at Bowdon with 50 beds and the Crossley Sanatorium at Delamere with 90 beds. Both these hospitals had been continuously filled during the whole year, and he did not know how the expenses could have been met if the plan of having private patients had not been adopted. From this class last year £3,905 was received. He had recently visited Delamere, and, though it was at a great altitude, he found more than half the patients sitting out in the sunshine. Mr. C. Behrens, Honorary Secretary, said the system adopted at Delamere was the open-air method, together with a very liberal diet. The average stay of the patients was about three months; no doubt a longer time would be beneficial, but, owing to the demands for admission and the large number of patients always waiting, the board had been compelled to fix a limit of three months. The patients remained the whole day out of doors, except at meal times, and at night slept with their bedroom windows wide open. The 50 beds at Bowdon had been fully occupied during the year, and it is distressing to know that a considerable number of applicants are at all times waiting. All the patients here belong to the working classes, and an appeal was made for warm clothes, as many of the patients often went insufficiently clothed.

Dr. Moritz presented the report of the out-patient department. The total number of cases during the last year was 11,443, as compared with 11,163 in 1907. The attendances were 35,248, which was far in excess of any previous record. A large number of cases are sent in a stage too advanced to permit of their admission to the sanatorium or to warrant hope of any successful treat-

ment, and the Medical Board desire it to be made known that it is preferable to send doubtful cases for consultation, and even to admit to the sanatorium cases that are only suspicious, rather than wait till the disease is too extensive to allow of any hope of recovery. During the year the need of some in-patient accommodation in closer connexion with the out-patient department in Manchester for urgent throat cases and acute chest diseases has been greatly felt, as patients have come whose condition demanded immediate admission to hospital, not simply for relief, but in some instances even to save life.

The financial position of the hospital is a source of anxiety, since if it had not been for an anonymous donation of £1,000 there would have been a large deficiency on the year. The total income was £13,704, and the expenditure £13,516, and the year closed with a balance due to the bank of £782. Further, no additions have been made to the endowment fund of the Crossley Sanatorium, and £34,000 is yet wanted to make up the £100,000 needed to put it in a sound financial position.

WESTMORLAND.

MEATHOP CONSUMPTION SANATORIUM.

THE ninth annual report of the Westmorland Consumption Sanatorium (January, 1909) shows that the institution continues to flourish, and that improvements have been carried out which will add still further to its efficiency. A wing has been added to the main building, providing improved accommodation for the domestic staff; the patients' dining-room has been enlarged, and four new châlets have been erected, bringing the total accommodation for patients up to 52 beds. Electric lighting has been installed; a disinfector for clothing and bedding, and an apparatus for sterilizing and cleansing the patients' sputum cups, have also been provided. Plans have been prepared for dealing with the sewage effluent of the sanatorium on a bacterial system of septic tanks and filtration beds. It is evident that nothing is overlooked which is required to make the Meathop Sanatorium thoroughly efficient.

It is proposed to establish a home for advanced consumptives in connexion with the sanatorium, and a considerable proportion of the required sum for this has already been raised.

The medical report shows that 147 patients were admitted during the year, the average number in residence throughout the year being 42.59. Although the proportion of severe and advanced cases admitted is very greatly in excess of what is desirable, the result of the year's work is encouraging. A table showing the family history, as regards consumption, of the patients admitted supports the view that heredity is of no more importance in tuberculosis than in any other bacterial disease, such as measles, pneumonia, typhoid, or influenza, and emphasizes the importance of endeavouring to improve environment in the home, etc., as a preventive measure. A very interesting table shows the subsequent history of all the patients who have left the sanatorium since 1900 and who can be traced.

BIRMINGHAM.

HOSPITAL SATURDAY FUND.

THE annual report of the Executive Committee stated that the thirty-sixth annual collection amounted to £20,632, which was made up as follows:—Collections in manufactories and industrial establishments, £20,516; interest allowed by bankers, £116. This total is the highest yet obtained in the history of the fund, and is £523 in excess of the previous year's collection. The firms subscribing numbered 2,153 as against 2,149 in 1907. The number of patients treated at the various convalescent homes supported by the Hospital Saturday Fund were as follows:—At Tyn-y-Coed, Llanrhos, near Llandudno, the convalescent home for men, 1,199 patients were admitted during 1908 as compared with 1,088 in 1907; at Marle Hall, Llanrhos, the women's convalescent home, the number of patients was 1,209, against 1,188 in 1907; at Red House, Great Baar, the convalescent home for children, 566 children and 98 women were admitted, as compared with 439 children and 94 women in 1907. The total number of patients in 1908 was 3,072, as against 2,809 in 1907. The committee has also assisted the Crippled Children's Union by sending during the year to the Red House 59 of that society's children, free of cost. Since the establishment of the fund in 1873 £400,000 have been collected, and the expenses have been under £20,000, or under 5 per cent. for the whole period.

WEST YORKSHIRE.

THE BRADFORD MEDICO-CHIRURGICAL SOCIETY.

A SPECIAL general meeting of this Society was held at the Midland Hotel, Bradford, on March 31st, when Mr. H. Percy Dean, surgeon to the London Hospital, gave an address on Spinal Anaesthesia, with special reference to Abdominal Conditions. On account of the prevalence of influenza in Bradford and the absorption of the medical men in their work the attendance was unfortunately not as large as it would otherwise have been. Mr. Dean's address was of the greatest interest, and was followed by a discussion in which many of those present joined. At the annual dinner of the society, which took place the same evening, between forty and fifty members and guests were present. Some excellent speeches were made and some songs and recitations given by members.

South Australia.

RHODES SCHOLARS.

THE Committee of Selection for the Rhodes Scholarship, which is annually allotted to South Australia, has for the second year in succession chosen a medical graduate. Last year, William Ray, M.B., B.S.Adelaide, went to Oxford, and the Regius Professor (Dr. Osler) speaks of him as a most promising student. This year, Henry Kenneth Fry, B.Sc., M.B., B.S., will join him there, having, like Ray, carried off every possible prize during his undergradute career.

THE SOUTH AUSTRALIAN BRANCH.

The Branch flourishes, even if it does not increase very rapidly in numbers. The annual meeting in June was a great success, and Dr. J. H. Evans, in his valedictory address, dealt with the important subject of "school hygiene" in a very able and interesting manner. In the absence of Dr. A. M. Morgan, the newly elected Vice-President, Dr. W. A. Verco took the chair at the annual dinner which followed; this is the first occasion on which these posts have been filled by graduates of the University of Adelaide. An arrangement has been made with the council of the university, whereby a room will be placed at the disposal of the members of the Branch, and a medical library maintained, the Branch guaranteeing a subsidy of £50 for ten years. To meet this liability, the subscription of members residing within twelve miles of the metropolis has been raised from two guineas to £3 a year, whilst country members will have certain privileges if they care to increase their subscription to £2 10s. a year.

THE HOSPITALS.

Dr. Anstey Giles has resigned, and Dr. C. E. Todd succeeds him as full surgeon to the Adelaide Hospital, Dr. Newland taking the junior position. Dr. R. S. Rogers has also resigned, and has been appointed a consulting physician to the same institution. Having come in recently for a windfall of something like £80,000, the hospital is spending a very considerable amount on a nurses' home, about £30,000 it is said; and though the grounds are quite spacious, the home is being built just where it will prevent any expansion of the out-patient department, which may be necessary in the future; such luxuries as costly marble baths, which few of us can afford in our own homes, are mentioned amongst the conveniences with which it is to be replete. At the Children's Hospital, Dr. Newland has been promoted to be surgeon to in-patients, vice Dr. Morgan resigned; and Dr. Harold Evans, a former resident medical officer, becomes Surgeon to the out-patient department. Dr. Morgan, who spent some months in England last year, is now devoting himself to ophthalmology, and is acting as locumtenent for Dr. Symons at the Children's Hospital.

India.

[FROM A CORRESPONDENT.]

ASSOCIATION OF MEDICAL WOMEN IN INDIA.

A NUMBER of medical women were present at the Bombay Medical Congress, the committee having very considerately reserved front seats for them in the Lecture Hall. The first general meeting of the Association of Medical Women in India was held on February 24th, at the house of Dr. Annette Benson, Physician in Charge of the Cama Hospital. Forty-two members were present, representing medical aid given to women and children in Government, mission, Dufferin, and native State hospitals. Miss Benson, M.D. (President of the Association) took the chair, and opened the proceedings in the following speech:

I offer all present a hearty welcome. With this meeting we inaugurate the Association of Medical Women in India, and it is with the greatest pleasure that I see such a large gathering of the association which only began to be organized two years ago. In few words I will describe the first object which we have before us to-day. Looking at the medical profession in India, we see men organized in a service offering worthy careers to its members, with fair rules of pay, promotion, leave, and pension. We see women a nondescript, scattered number of isolated units, at the mercy of chance employment and still more chance conditions of service, and almost all in subordinate positions. Yet the majority of better-class women of India have no one to look to for help in sickness and childbirth but these same isolated units. For the good of this large factor of the population, and therefore in the name of the public weal, we aim so to improve the conditions under which medical women work as to make their work efficient and their reward fair. When you have amended and confirmed the constitution proposed last August, you shall have laid before you a scheme for the organization of medical women in India.

The constitution and rules with amendments were then read. Miss Staley, M.B., described on behalf of the council a scheme for the organization of a women's medical service for India. This scheme was referred to a subcommittee to report to the council.

Dr. Baumler spoke on the improvement that had taken place in women's hospitals in the last twenty years, Dr. Brown on the training of dhais, and Dr. O'Hara against the training of indigenous dhais as now conducted. Letters from various members were read.

The President mentioned various members of the association who had done good work for it during the year—the honorary secretary, the editor, members of council, and the member who had conducted the information bureau so successfully during the past year.

LADY MINTO'S INDIAN NURSING ASSOCIATION.

This admirable institution, whose object is "to provide and maintain a regular service of fully trained and experienced nurses throughout Northern India and Burmah," has been in existence for two years, and the report for 1908 gives evidence of growing appreciation and increasing success. The organization consists of a central committee in Calcutta, whose president is the wife of the Viceroy and whose secretary is the Viceroy's surgeon, and nine provincial branches. The central committee selects, pays, distributes, and discharges nurses, and the provincial committees control the employment and upkeep of the nurses and collect subscriptions and fees. Subscribers pay according to salary, and are entitled to a first claim on the services of the nurses and at lower rates than non-subscribers. Firms and regiments are permitted to join the association on special terms. Three lady superintendents and forty-four nurses constitute the staff, and 338 cases were attended during the year, of which 103 were cases of enteric fever. The income of the year amounted to Rs. 107,267, of which Rs. 33,172 were fees earned by the nursing sisters. Rs. 43,650 were invested. There is a home committee which, under the title of the Up-Country and Punjab Nursing Association, used to carry out on a more limited scale the same purposes now subserved by Lady Minto's association. The report, which is written by Surgeon-Lieutenant-Colonel W. R. Crooke-Lawless, C.I.E., honorary secretary, and Mrs. E. Davies, chief lady superintendent, is illustrated by several excellent photographs of the homes.

PLAGUE IN CALCUTTA.

Dr. T. Frederick Pearse, who exercises control over the special plague establishment in addition to his duties as health officer of Calcutta, has submitted a report of the prevalence of plague in the city during the year ending June 30th, 1908. This includes a "quiescent" period, July–December, 1907, and an "active" period, January–June, 1908. During the former, 313 deaths were registered, and during the latter 1,495, giving a total for the year of 1,808. This is the smallest aggregate since 1898, the year in which plague was introduced into Calcutta. The epidemic of 1908 was therefore exceptionally mild; it developed more gradually and later, reached a climax earlier, and declined more slowly. It is remarkable that the proportion of bubonic cases is higher in the active than in the quiescent period; in 1908 it was not so high as usual, also the case-mortality was less. The number of inoculations performed was 1,979, and no attack of plague occurred among these; 122,069 rats were destroyed, at a cost of Rs.16,036. Observations made by Drs. Hossack and Crake, special plague officers, indicate that, as in Bombay, the "rat-flea season corresponds with the plague season"; but "the comparative absence of fleas in Calcutta houses, and the practically complete absence of fleas on man," are held to cast doubt on the rat flea being the chief or only agent of infection.

Correspondence.

HUNGER PAIN AND DUODENAL ULCER.

SIR,—Mr. Moynihan evidently remembers the old legal adage, "If you have a bad case abuse the plaintiff's attorney." Having ventured, in quite temperate language, to express the opinion that hunger pain does not always point to the existence of a duodenal ulcer, I find myself denounced by him as a person whose views are always "fundamentally inaccurate," who trusts in diagnosis to what he patronizingly terms "chemistry and make-believe," and who is totally unacquainted with that peculiar variety of pathology which he calls "the pathology of the living." I venture to think, however, that a little more argument and a little less abuse of one who ventures to differ from him on a scientific question might have impressed your readers more favourably with the strength of his case, for, after all, we are both merely trying to get at the true meaning of a symptom, although we approach its study from different points of view, and I am perfectly ready to be convinced by Mr. Moynihan if he can show me that I am wrong.

Perhaps some misapprehension would have been avoided if, in my first letter, I had defined what I mean by "hunger pain." Dr. Herschell, for example, evidently distinguishes between hunger pain and the "pain of hyperchlorhydria." Now, I wish to make it quite clear that I, at least, recognize no such distinction, for the pain of hyperchlorhydria corresponds accurately to Mr. Moynihan's definition of hunger pain, inasmuch as it "comes on when a patient should be beginning to feel hungry for his next meal."[1] Granted this definition of the term, I think Dr. Herschell would agree with me that hunger pain does not necessarily imply the existence of an ulcer in the duodenum. I know that this does not affect Mr. Moynihan's position one whit, for he evidently does not believe in the existence of hyperchlorhydria as a separate disorder at all, but regards it as a figment of the imagination, a product of "chemistry and make-believe," and so long as he pooh-poohs all evidence except that obtained by operation I do not see how I can hope to convince him. This only I would say, that if hunger pain really be always associated with the presence of an ulcer in the duodenum, then (1) duodenal ulcer is one of the commonest causes of pain during digestion, (2) it is quickly and easily curable by medical treatment, and operation for it is usually unjustifiable (as Dr. Hertz very cogently points out), and (3) the scars of healed duodenal ulcers ought to be amongst the commonest phenomena of the *post-mortem* room. Ten years' experience in the London Hospital out-patient department fails to show me how these propositions can be denied.

[1] Vide his article in the JOURNAL for November 16th, 1907.

As regards the evidence afforded by operation I am, perhaps, not so ignorant as it pleases Mr. Moynihan to imagine, for I avail myself very freely of the help of my surgical colleagues in gastric cases, and often witness their operations. I have hitherto supposed, however, with Dr. Saundby, that it is by no means always easy to say for certain whether there is an ulcer present in the duodenum without opening into the latter, and in this belief I have been confirmed by the statements of my surgical friends. On this point, however, I freely admit that I speak with no authority, and am content to leave Mr. Moynihan and his surgical *confrères* to settle it amongst them.

One word more. Mr. Moynihan has been kind enough to point out in detail the defects in my equipment which make my opinions on this subject (in his estimation) not worth serious consideration. So perhaps he will forgive me if I suggest in my turn that what *he* lacks is the sense of proportion which only comes from an extensive acquaintance with dyspepsia in all its forms and in all degrees of severity such as can only be obtained in a large medical out-patient clinic. When he has extended his experience in this direction it will be time enough for him to dogmatize, for "not till then"—if I may borrow his own language—"is he qualified to pose as critic; not until then can he speak with full authority."—I am, etc.,

London, W., April 5th. ROBERT HUTCHISON.

SIR,—The reply to the question which so strangely puzzles Dr. Saundby is quite simple. The proof that a duodenal ulcer is present is the seeing it. A duodenal ulcer which has caused attacks of "hunger pain" can be seen, and felt, and displayed. If there is any doubt whatever as to the presence of an ulcer, in my opinion it is certain that no ulcer exists; and no operation upon the duodenum or the stomach is then permissible. The cause of the symptoms must forthwith be sought elsewhere; and, as Mr. A. B. Mitchell says, the gall bladder demands a special scrutiny, for cholelithiasis is responsible for the closest mimicry of the symptoms of ulcer. I would ask Dr. Saundby not to believe in the existence of a duodenal ulcer that he cannot plainly see, and neither to urge nor to sanction the performance of gastro-enterostomy in the absence of an obvious demonstrable lesion. It is not true that "in a large proportion of cases the surgeon who performs gastro-enterostomy is not in a position to say whether there is a duodenal ulcer or not." The surgeon can and must know, in every case without exception, that an ulcer is present before he undertakes this operation. There is no such thing as an invisible or impalpable duodenal ulcer. The intangible duodenal ulcer is usually a gall bladder full of stones, or an inflamed or tuberculous appendix.

I regret to find myself in profound disagreement with the views of Dr. Hertz, to whom I am very grateful for the work he has done in other directions than this. He tells me that the symptoms of duodenal ulcer "can be instantaneously relieved and in time caused to disappear entirely." I agree. That is one of the characteristics of duodenal ulcer to which I have repeatedly called attention. But what of recurrence? The most authentic feature in cases of duodenal ulcer is the recurrence of the "attacks"; an attack can be "cured," the ulcer remains, to cause fresh attacks in the future. It is true that the out-patient treatment of any large hospital relieves the symptoms in such cases, and the patient ceases then to attend. Dr. Hertz concludes, therefore, that "duodenal ulcer is easily cured by medical treatment." The evidence does not justify the conclusion. The relief of an attack is confused with the cure of the disease. Many of the patients upon whom I operate tell me that they have been "cured" repeatedly; and one of them, a medical man, told me with a smile that he had been pronounced "cured" fifteen times. Medical treatment relieves an "attack" due to a chronic duodenal ulcer; nothing but surgical treatment can cure the patient.

Dr. Hertz quotes the well-known statistics laboriously collected from the *post-mortem* records of Guy's Hospital by Perry and Shaw. They are absolutely irrelevant. I cannot conceive that the frequency of the fatality of any disease is to be measured by the number of bodies in which evidence of it is detected in the *post-mortem* room. Does a patient not suffer during life from any disease unless at last he dies in hospital from it? In forty years at Guy's Hospital only one case of obstruction of the common bile-duct by a stone was seen on the *post-mortem* table; and during twenty-five years only 333 bodies were found to contain gall stones. Do these numbers bear any sort of proportion to the frequency of these diseases, or can any just inference be drawn therefrom as to their fatality? Perry and Shaw also say (p. 203) that in the years 1826–92 there were 7 cases of perforating ulcer of the duodenum on the *post-mortem* table at Guy's Hospital. Does that represent the frequency or the mortality of the condition? Mr. Mitchell of Belfast operated upon 12 cases in 1907–8[1] with 12 recoveries (a record creditable alike to him and to the medical men who so quickly recognized the nature and gravity of the cases). Is doubt cast upon Mr. Mitchell's record by the fact that in sixty-six years only 7 patients died in Guy's Hospital with a similar condition? Surely all that can be said is that there is no correspondence in this, as in so many other cases, between clinical and mortuary experience. It is really time for the fetish worship of *post-mortem* statistics to be suppressed. They have their value; that no one denies; but that value must be tested constantly in the light of increasing clinical knowledge. If we are for ever to fix idolatrous eyes upon the pages of these ancient inspection records, and to ignore the lesson which the living can daily teach us, we are smitten with the intellectual blindness, and we are returning to the methods, of the Middle Ages.

It is not surprising that with false premisses the false deduction is drawn by Dr. Hertz that "in the vast majority of cases" operations upon duodenal ulcer are "unjustifiable" (was that word weighed, I wonder?). I am not concerned, however, to convict Dr. Hertz of logical error. He has expressed his desire to see the work we are doing, and his record as an original observer is so distinguished that I am content to leave him to form his own judgement upon the material he will here investigate. He will find that the patients who have been so often cured by medical treatment embrace gladly the opportunity of that relief from their repeated sufferings which operation confers. And he will, I hope, be satisfied, as others in the like doubt have been, that surgical treatment is not only justifiable but compulsory, if the patient is to be freed from his sufferings, and to be relieved of the danger to his life with which haemorrhage and perforation threaten him.—I am, etc.,

Leeds, April 5th. B. G. A. MOYNIHAN.

ARTERIAL BLOOD PRESSURE BEFORE AND AFTER MUSCULAR EXERTION.

SIR,—In reference to the figures published by Dr. Oliver Williamson on blood pressure after enforced exercise,[2] the following observations reported by myself and Mr. Martin Flack to the Physiological Society on January 23rd last may be of interest.

We made a number of observations on the pulse, blood pressure and respiration which show that oxygen inhalation by maintaining or restoring the vigour of the heart, increases the lasting power and lessens the after-fatigue of athletes. The fatigue which follows an athletic feat seems to be mainly cardiac in origin, and due to want of oxygen. Want of oxygen lessens the nervous resolution of the athlete and his muscular power.

The blood-pressure observations were taken on the radial artery with the new Leonard Hill sphygmometer. This sphygmometer allows readings to be taken quickly and accurately.

In administering oxygen we used a wide mouthpiece fitted with valves, and a soft nose clip. The oxygen (or air) fills a bag holding 3 cub. ft. Between the expiratory valve and the meter an anaesthetic rubber bag is placed to act as an elastic cushion and prevent the meter being overrun.

The tests were both on boxers and on students, who ran up and down stairs as fast as possible a given number of times with or without oxygen before and after each run. The boxers were given air or oxygen in the intervals of the fight. The subjects breathed from a bag through a Zuntz metre, and did not know whether air or oxygen was in the bag. Blood pressure, pulse frequency, respiratory frequency, and breathing volume were recorded. Results show that time of the run is lowered, pulse frequency

[1] Reprint from *Trans. Ulster Med. Soc.*, 1907–8.
[2] BRITISH MEDICAL JOURNAL, February 27th, 1909, p. 530.

lowered, and blood pressure kept up by breathing oxygen; breathing volume and frequency are not definitely changed' being dependent apparently on the rate of work and the CO_2 production, but a feeling of relief is given by the oxygen. The subject breathes easily, and with his belly rather than his chest. The breathing of the exhausted runner or boxer is thoracic, and this changes to belly breathing on inhalation of oxygen. The respiratory pump is allowed to fill the heart, and the pulse becomes full.

The figures (which will be found in the *Journal of Physiology*, vol. xxxviii, Nos. 2 and 3, February 9th, 1909) show that blood pressures may rise much higher than Dr. Williamson found. In hot baths we have found pressures as low as 60 mm. Hg. So the range under these extreme conditions in a student may be from 60 to 220 mm. Hg.—I am, etc.,

LEONARD HILL.

London Hospital Medical College, March 25th.

HUMAN AND BOVINE TUBERCLE BACILLI.

SIR,—With great interest I read in your issue of October 10th, 1908, a paper by Mr. Nathan Raw, M.D.Durh., etc., on Human and Bovine Tuberculosis.

The author states that bacilli of the *Typus humanus* produce pulmonary tuberculosis, tuberculous laryngitis, secondary intestinal ulceration, whilst bacilli of *Typus bovinus* produce tuberculosis of (1) mesenteric glands, (2) peritoneum, (3) lymph glands, (4) bones and joints, (5) meninges, (6) lupus, (7) genito-urinary apparatus, (8) middle-ear and acute miliary tuberculosis.

Hereafter Mr. Raw says that pulmonary phthisis is caused by the bacilli of the *Typus humanus*, which do not attack the other viscera, and that practically all other tuberculous lesions are the result of infection, generally in infancy, through the digestive intestinal tract, by milk and other food products containing bovine bacilli.

These statements have much interested me. Since three years I am now working in Chungking, Western China, as Surgeon to the Imperial German Consulate of the Province of Szechuan, and may be allowed to state that the most prevalent disease here is tuberculosis of every description, attacking every tissue and every organ of the native people. If Mr. Raw's opinion be right, the cause of these most frequent tuberculous lesions of bones, joints, glands, etc., must be the bacillus *Typus bovinus*. The carriers of bovine bacilli must, however, I should think, for the most part be bovines, suffering from *Perlsucht*, which propagate the bacilli by their milk and flesh. But in this part of China cow's milk is very scarce, and certainly in no way a staple food of the people. The children are suckled by their mothers for two and even three years, besides taking other food. If the Chinese of the better classes drink milk at all, it is the imported condensed milk. Beef, which next to milk would be the chief propagator of the bovine bacillus, is also hardly eaten, as Mohammedans are not very numerous here, and the followers of other faiths prefer pork.

Surely under these circumstances infection by bacilli of the bovine type on a large scale is not very likely, and I must think that the occurrence of such very numerous tuberculous affections of bones, joints, glands, etc. in such a country is somewhat contradictory to Mr. Raw's statements.

As to the route and time of infection I agree with Mr. Raw. Only to me it seems hardly possible that the food is the only carrier of the infection, at least, here in Chungking. The Chinese are very careless in matters of cleanliness. They spit wherever they stand and go, in streets and houses (they spit even on the foreigner's carpets!). The little children crawl on the ground, soil the fingers and faces with dirt containing bacilli, and swallow the latter. Flies may also carry bacilli to foodstuffs; or the phthisic grandfather wipes his own bacilli-infected mouth with his hand and feeds with the same hand, which is never washed, his beloved grandchild. In this and a hundred other ways bacilli are conveyed to the mouth and reach the intestinal tract. As dust, owing to the constant dampness of the air, is conspicuous by its absence here, I may tender the opinion that phthisis pulmonum also is caused by bacilli introduced by the intestinal route.

I am sorry to say that by want of accommodations and outfit I have as yet been unable to ascertain the presence of both types of bacilli or of only one or the other by inoculation in animals. Microscopically I have found only bacilli which I diagnosed as belonging to the *Typus humanus*.—I am, etc.,

Dr. ASSMY, Staff Surgeon, German Army,
Attached to the I.G. Consulate,
February 25th. Chungking, West China.

PULMONARY TUBERCULOSIS IN CHILDREN.

SIR,—Deductions from figures and statistics are notoriously dangerous, and I think a little reflection will convince Dr. Hamilton Williams that she has fallen into a serious fallacy when she makes the alarming statement that, because nearly 30 per cent. of those who die in London hospitals for children have tuberculous lesions in their lungs, therefore 20 to 30 per cent. of living children have pulmonary tuberculosis. If it were true, the race would soon become extinct. It may be instructive to apply the same method of reasoning to another common disease—cancer. Of all women who reach middle life, one out of eight will probably die of cancer; therefore, of all women past middle life, one in eight is suffering from cancer, which, as Euclid would probably have said, is absurd. Yet cancer does not kill, as a rule, nearly so quickly as does pulmonary tuberculosis in children, so that there is more time for cases to accumulate. The fact is, of course, that these serious diseases soon bring about a fatal issue, and consequently no such accumulation of cases as Dr. Hamilton Williams assumes can possibly occur.

After all, we must start from the solid basis of pathological anatomy, and this confirms the general belief that the ordinary so-called chronic phthisis of adults is rarely met with in childhood. In 100 autopsies on tuberculous children I only found it in three instances, and two of these were girls of 11 and 12 respectively, in whom the conditions were approximating to those of adult life. In the vast majority of cases of pulmonary tuberculosis in early life the disease spreads rapidly and very irregularly through the lungs; it not uncommonly invades them from the bronchial glands, in its course and physical signs it frequently simulates bronchopneumonia, other organs become involved at an early period, and in a large proportion of cases life is brought to an abrupt termination by general tuberculosis or tuberculous meningitis.

The essential difference between Dr. Hamilton Williams and myself is that she assumes that pulmonary tuberculosis in childhood runs a similar course to that which it usually does in later life, so that children suffering from it may continue to go about for a more or less prolonged period, just as adults commonly do. On the other hand, both from clinical and pathological experience, I regard it as usually an acute or subacute disease, which soon incapacitates a child from attending school, and generally proves fatal in a very few months at most. I fully admit that even when the disease is active and advanced the physical signs in the chest may be most ambiguous, and I have frequently come away from the *post-mortem* room in a chastened spirit, after finding that lungs in which I had just suspected the existence of tuberculous disease were riddled with caseous masses. The difficulty is the greater because children generally die before cavities have formed large enough to give rise to recognizable cavernous signs.

I am sorry that the simple question I asked at the end of my last letter has not elicited a single reply. May I urge some one who regards tuberculous milk as a very common source of pulmonary tuberculosis to explain why it is that tubercle bacilli of the bovine type are not more commonly found in ordinary cases of phthisis?—I am, etc.,

London, W., March 29th. J. WALTER CARR.

SLEEP AND WANT OF SLEEP.

SIR,—With reference to Dr. Farquharson's article on Sleep and Want of Sleep in the JOURNAL of February 27th, p. 522, it may be noticed that, of the expedients for inducing sleep, the contemplation of memorized percepts is the most successful. The contemplation in memory of objects perceived by the senses, principally (indeed, practically entirely) by sight, is to be aimed at, without considering their qualities or relations to each other, or

any attributes of them other than some one sensation which evidences their existence. The contemplation of mixed sensations, such as sight and taste, is not desirable—as, for instance, in a fruit. The percept contemplated must not be allowed to run on into a concept; the attributes or mutual relations of the objects so perceived must not be thought of.

Enumeration is useless as a device for procuring sleep, for we do not get this contemplation of simple concrete percepts, of objectivity, in dealing with numbers; there is no sense memory, but only contemplation of the relationships of abstract ideal entities. This is why counting or any consideration of numbers cannot be successful, for, to procure sleep we want to fill the mind with sense perception to the exclusion of ideation. The effort of contemplating motion as an attribute of the object perceived has also to be excluded; reading is worse than useless.

The higher phenomena of the scale of consciousness—emotion, ideation, etc.—have to be eliminated and set at rest. This is a form of the autohypnosis practised in the East. Contemplation of the memorized percept of a familiar locality—apart from any concept of attribute or incident—is a successful autohypnotic which becomes easy with practice.

Take, for example, the device of procuring sleep by contemplation of the memorized percept of the interior of Westminster Abbey, let us say, by one who is fairly familiar with it. In visual memory—not in imagination—he enters at the north transept and sees the rose window of the south transept as a blur of colour without detail. He sees statues—knowing them as Beaconsfield, Gladstone, etc.—subconsciously (a bad word but understood) without recalling them by conscious memory of detail. He advances to the centre and stands at the chancel steps, taking in the blurred percept of the Sanctuary and surroundings; turning, he has the vista of the choir and the west window over the screen; he then passes down the nave to the west door, and, turning, sees in the east the screen and organ, and beyond the clerestory lights of the apse. Then, slowly, up the aisle to the right of the choir to Poets' Corner in the south transept, without any conscious effort of memory to recall details. Then the South Ambulatory with and into the chapels of St. Benedict, St. Edmund, and St. Nicholas, up to the Confessor's shrine—slowly, slowly—then to Henry VII Chapel to the flagstone marked Cromwell at the extreme east; to the aisle on the right, with the tomb of Mary Queen of Scots and tombs of Queen Anne and her husband, of Charles II, and of William and Mary; the aisle on the left with Queen Elizabeth's tomb, and that of the murdered princes; then to the North Ambulatory, and into the chapels of St. Paul, St. John the Baptist, and the Inslip Chapel.

The time occupied in memorizing all this mass of perception will be longer if one is intimately conversant with what there is to see, and shorter if there is only a slight knowledge of the place; but it may well occupy half an hour, by which time one would probably be asleep. Any other place may answer the same purpose—the Tower, St. Paul's, a provincial cathedral, or other interior familiar enough to be memorized without effort—a familiar highway from one town to another, the streets from one part of a town to another part, as long as motion and incident are excluded, and the percept kept from wandering into a concept. Emotions and ideas have, of course, to be quite excluded, and this is attained by practice.

One may have a *répertoire* of interiors or itineraries, and make a selection of a favourite one soon after he lays his head on his pillow; but having made a selection he must adhere to it, and not jump from one to another.—I am, etc.,

JOHN MARTIN,
Lieut.-Col, late R.A.M.C.

London, W., Feb. 28th.

THE NATIONAL SERVICE LEAGUE AND THE MEDICAL PROFESSION.

SIR,—I am glad to see Dr. Cowley's letter of March 27th. I have been a member of the Executive Committee of the league, and I speak for them whenever I can. I wish the members of our profession would support the league. In my opinion, no measure would do more for public health or for public morals than an Act which obliged young men to go through a few months of physical training and military discipline.

Let me remind you of the words of the *Spectator* after watching the six months' training under Colonel Pollock of its experimental company:

> We have always believed that such training, could it be brought about, would be a great benefit to our population; but we now realize that the benefit is so enormous that every effort should be made to endow the whole of the youth of the nation with physical training of a kind similar to that undergone by the *Spectator* Company, and to make it as universal as the literary education imposed upon our children by the Act of 1870. . . . We think that we do not need universal service from the military side, but we have also come to realize that universal military training is, on the moral and physical side, so beneficial that we do not think it ought to be withheld from the young men of Great Britain (*Spectator*, September 15th, 1906).

I do not agree with the *Spectator* about our military needs, but his opinion on that point makes his testimony all the more valuable on the others.—I am, etc.,

W. P. HERRINGHAM.

London, W., April 1st.

RURAL DISTRICT NURSING ASSOCIATIONS.

SIR,—I can fully endorse the remarks contained in the letters of Dr. Wm. Milligan and "Parish Doctor" published on March 13th and 20th, on country district nursing associations. In one of the villages in which I practise the Lady Bountiful (of whom the inhabitants live in awe) insists on the poor and the small tradespeople subscribing to her pet hobby, the nursing association, in spite of the protests of some of her victims that in times of illness they are put to a double expense—the nurse, who comes in for a few minutes a day, and the neighbour, who is capable of, and really does, all the nursing of the patient, in addition to the work of the house and looking after all the other members of the family, as under the old régime.

This district nurse, who "practises" in four of my villages, has received six months' general training only, and is empowered and instructed by her committee, not only to attend any medical or surgical case on her own responsibility, but also to do her utmost to persuade patients not to call in a medical man, with the result that this unqualified practitioner attends cases of erysipelas, measles, and scarlet fever at the same time as she is nursing midwifery patients. Recently, in one week, two of her patients were "found dead in bed," without having been seen by a medical man. In both cases I was asked to give a certificate of death, which I naturally refused to do. On the first case, a single woman aged 60, an inquest was held, and I was ordered by the coroner to make a *post-mortem* examination. I found that the patient had been suffering from fatty degeneration of the heart, but only to such extent that with proper care her life might have been prolonged some years. Owing, I presume, to the fact that the jury was composed solely of strong supporters of the District Nursing Association, the nurse was not even called as a witness, and the fact that she had attended the deceased was afterwards hushed up. Upon the second case, not even an inquest was held, the coroner giving a certificate.

If two such flagrant cases as these can be thus treated, it is evidently hopeless for a medical practitioner to fight single-handed. Perhaps the fact that I have no near colleague to support me increases my difficulty; but truly she is a keen competitor to be reckoned with, and I myself have suffered, not only from her activity, but also the loss of several of my patients (who are members of the local nursing committee or their friends) because I refuse to support and cover this dangerous "unqualified practitioner."

It is certainly time that something was done by united action to safeguard both the public and the qualified medical practitioner, and I for one would gladly support any such movement.—I am, etc.,

COUNTRY PRACTITIONER.

March 24th.

THE MEDICAL PROFESSION AND LIFE ASSURANCE.

SIR,—My attention has just been called to an address on "The Medical Profession and Some Life Assurance Companies," delivered by J. Farrar, M.D., of Gainsborough, and reproduced in the SUPPLEMENT to your issue of November 28th, 1908. If it is not too late, I should like to make a few observations on some of the statements appearing therein.

Now, in the first instance, I have no wish to minimize in any way the importance of the work done by the medical profession for insurance companies. I admit, too, that it is done, with a few exceptions, conscientiously and with thoroughness. The real question is, Are the fees paid by life offices adequate and reasonable? It is to that I wish to address myself, and at the outset protest strongly against Dr. Farrar's suggestion that there is any attempt on the part of the life assurance companies to "sweat" the profession. I have had considerable experience of insurance companies, and I know that it is their practice to pay a fee of £1 1s. in the case of the larger insurances. In the case of small insurances of, say, £100 or £200, however, the fee is limited to 10s. 6d., and it is to this limitation, I presume, that Dr. Farrar objects. If he will look at the rates of premium charged by the average company he will find that the amount payable yearly by a proposer of, say, age 30, for a policy of £200 would be about £4; and when it is remembered that out of this first premium must be paid agent's and overriding commissions, policy stamp, head office and branch expenses, as well as the medical fee of 10s. 6d., it will be seen that there is very little remaining to cover the cost of the risk of death. But how much more difficult is it to adjust matters when, say, only a quarterly premium is paid on the assurance? This quarterly premium would amount, in the case of an assurance of £200, to approximately £1; in the case of an assurance of £100 to, say, 11s. Here, then, is nearly the whole of the first premium swallowed up by the payment of the medical fee, with the possibility that before three months have expired the assured may have changed his mind either as to the desirability of assurance generally or the company to which he proposed in particular, the policy lapsing as the result. It may be said that the cases I have taken are extreme examples, but the Blue Books issued by the Government will prove to your readers that the average amount proposed for is not in excess of £200.

If it is impossible to pay a larger fee in these cases, how much more so would it be in the case of small industrial assurances? Here the practice is to pay a fee of only 2s. 6d., and an examination is insisted upon in cases where the sum assured is £25 and the premium only 2d. or 3d. a week. Again, it will be seen that the medical fee exhausts the company's receipts in respect of that particular case during the whole of the first ten or fifteen weeks, and that the company is obliged to wait patiently until the expiry of that period before it has a chance of recouping itself for the money spent in expenses and on agent's and procuration fees, which are so much higher in the case of industrial assurances than in respect of proposals of £100 and upwards, with the prospect that the policy may lapse, as so many do, before even the medical fee is covered.

Dr. Farrar suggests that very frequently large sums are lost to the companies through early industrial claims which would otherwise be prevented by the expenditure of a guinea on medical examination. How much greater, and how much more certain, would the loss to the companies be if an expense of this kind were to be incurred in connexion with those cases! As a matter of fact the companies would all prefer to have a medical examination in every case, but the cost, as has just been shown, is prohibitive.

Instead of the profession being "sweated," I think it will be admitted by reasonable men that it is generously treated by the offices; and I would warn the members of the profession that if any change is instituted in the present state of affairs it will rather be in the direction of employing medical men for certain areas who will give their whole time to the service of the companies for fixed salaries, and thus perform more economically the work which is so widely distributed at present at such a considerable expense.

May I make one further remark—a reference to Dr. Farrar's suggestion that members of the profession, when asked by patients to give advice as to the best office in which to insure, should follow his lead and recommend only those offices which, in his opinion, pay adequate remuneration for professional service? Evidently his conscience, which he told his audience, in almost the same breath, would not allow him to perform half-heartedly the work done for those companies who paid him insufficiently, was not alert enough to suggest to him that where advice was asked for by a confiding client it should be given solely with a view to the best interests of that client, and that the best company from a policy-holder's point of view should be selected, without regard in the slightest degree to whether the doctor was consulting in any way his own interests in making the selection.—I am, etc.,

Liverpool, March 12th. A. A. Snodgrass, F.C.I.S.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

Spring Graduation Ceremonial.

The Spring Graduation Ceremonial took place on Friday, April 2nd, at 10 a.m., when the Vice-Chancellor, Principal Sir William Turner, presided.

The degree of Doctor of Laws was conferred on Mr. J. M. Barrie, Emeritus Professor Crum Brown, and Surgeon-General Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Service, and the degree of Doctor of Science in the Department of Public Health on William Burney Bannerman, M.D., B.Sc. (Lieutenant-Colonel, I.M.S.)

Ordinary Degrees.

The following were presented by Professor Harvey Littlejohn, Acting Dean of the Faculty of Medicine, for the degrees of Bachelor of Medicine and Bachelor of Surgery:

C. R. White (*in absentid*), W. Bainbridge, J. H. Bell, J. J. P. Charles, W. C. Fragoso, K. Fraser, D. M'D. Grant, J. A. Harley, J. Hewat, V. D. O. Logan, A. S. Macbeth, D. M'Carrol, G. M. Mackay, M.A., J. C. Mackenzie, A. C. M'Killop, A. K. Maclachlan, W. M. Menzies, H. L. Morrow, W. G. Riley, Eleanor M. Thompson, N. J. Watt, W. C. Whiteside.

The degree of B.Sc. in the department of public health was conferred on J. R. Dickson, M.B. (*in absentid*): and the diploma in Tropical Medicine and Hygiene on S. A. M'Clintock, S. M'Naughton, and H. L. Sells. Professor Kirkpatrick delivered the address to the graduates on reform in the Faculties of Arts and Law.

Examination Results.

The following candidates have been approved at the examinations indicated:

Final M.B., Ch.B.: *Forensic Medicine and Public Health.*—Janet Armstrong, J. G. Boal, W. Dunlop, T. R. Evans, R. W. Greatorex, R. R. Kerr, C. G. Kurien, W. G. M'Afee, A. D. M'Kenzie, Mary Macmillan, H. F. Panton, H. R. A. Philp, S. Pinion, J. P. du Plessis, Ella F. Pringle, C. S. Sandeman, T. Welsh.

Midwifery.—T. A. Adams, Janet Armstrong, Eveline R. Benjamin, L. A. P. Burt, A. Campbell, J. P. Charnock, H. A. Cookson, J. Crocket, W. Dunlop, R. W. Greatorex, T. E. Guthrie, R. R. Kerr, C. G. Kurien, Lina Kurz, Janet Leiper, L. Leslie, H. Lipetz, W. G. M'Afee, R. B. Macfie, A. D. M'Kenzie, A. G. Macleod, R. J. A. Macmillan, G. M. Miller, J. M. Moyes, Rhoda M. Murdoch, W. J. Nisbet, F. H. Noronha, H. R. A. Philp, G. R. Pillai, S. Pinion, J. P. du Plessis, Ella F. Pringle, J. Renwick, Agatha M. Robinson, A. C. Russell, C. S. Sandeman, J. M. Scott, J. D. Skinner, Mary M. M. Turpie, T. Welsh, S. Williams.

Medicine and Surgery.—T. A. Adams, F. Armstrong, Alice E. M. Babington, B.A., T. H. Balfour, R. A. Bell, F. A. J. Brodziak, G. S. Brown, A. N. Bruce, B.Sc., W. F. Buist, O. S. Bulloch, W. L. Burgess, L. A. P. Burt, A. W. Burton, Sarah E. Buyers, J. Argyll Campbell, G. L. Cawkwell, R. B. Chamberlain, A. D. Child, J. Crocket, J. K. M. Dickie, Adelaide A. Dreaper, A. M. Elliott, H. G. Feltham, G. F. Fismer, E. L. Galletly, Mary M. Gardner, A. W. Gill, W. E. Goss, W. T. Graham, A. G. M. Grant, A. G. Hamilton, H. F. Hamilton, R. C. Harkness, T. E. Harwood, B.A., J. Henderson, G. R. Inglis, Flora Innes, W. C. Jardine, A. M. Jones, G. E. King, J. H. Lawry, L. Leslie, H. Lipetz, W. R. Logan, Mary Low, M.A., H. F. Lumsden, D. C. Macaskill, M.A., A. J. M'Connell, W. Macdonald, J. Mackail, M.A., G. E. G. Mackay, A. D. Mackenzie, A. G. Macleod, R. J. A. Macmillan, A. J. Macvie, J. Malloch, C. G. Marais, T. H. R. Mathewson, W. Messer, E. L. Middleton, A. F. W. Millar, A. M. Minford, L. M. V. Mitchell, S. P. Moore, W. Morrison, J. A. Mortimer, J. M. Moyes, R. M. Nicholson, W. J. Nisbet, H. R. A. Philp, J. Renwick, D. G. Robertson, W. S. Robertson, D. M. Ross, R. P. Rosser, C. M. Schaffter, J. M. Scott, J. J. M. Shaw, M.A., K. Simpson, G. H. Sinclair, H. F. Smith, B.A., T. C. Smith, G. S Sowden, M.A., J. Sprent, B.Sc., W. Stevenson, M. Stewart, W. Stewart, C. P. A. Stranaghan, J. Swan, A. L. Taylor, B.Sc., H. W. Teague, J. A. Thompson, W. S. Thomson Mary M. M. Turpie, A. Watson, J. P. Whetter, J. Wilson, J. D. Wilson, M.A., Margaret C, Young.

UNIVERSITY OF GLASGOW.

The following candidates have been approved at the examination indicated:

Final M.B., Ch.B.—J. Allan, J. G. Anderson, W. H. S. Armstrong, D. M. Borland, M. W. Browdy, J. A. G. Burton, J. Cameron, M. I. T. Cassidy, W. B. Cunningham, J. C. Dick, A. G. Gilchrist, G. S. Gordon, E. O'D. Graham, J. Harper, M.A., W. Howat, M.A., J. P. Kinloch, D. N. Knox, A. M. Macdonald, M. D. Mackenzie, G. Macleod, M.A., A. M'Pherson, T. Marlin, H. N. Rankin, A. Roemmele, W. W. Rorke, W. Rutherford, J. J. Sinclair, A. Turnbull, M.A., B.Sc., J. B. Whitfield, J. A. Wilson.

UNIVERSITY OF LEEDS.

The following candidates have been approved at the examinations indicated:

First M.B., Ch.B. (*Part I*).—C. M. Gozney, H. R. Knowles, M. Peto, H. P. Shackleton, H. A. Sinson, H. W. Symons, H. L. Taylor, C. Ward, J. Wilkinson, and J. Wright.

SECOND M.B., CH.B. *(Part I, Anatomy and Physiology).*—A. L. Bastable, H. Caplan, L. Dunbar, C. J. H. Little, G. E. Macvie, N. V. Mitton, F. W. Nunneley, W. Robinson, J. B. Sinson, J. P. Walker, T. L. Walker, F. Wigglesworth, B. W. F. Wood. *Part II.*—H. N. Ingham, C. B. Richardson.

UNIVERSITY OF DUBLIN.

THE following candidates have been approved at the examinations indicated:

INTERMEDIATE MEDICAL *(Part I).*—A. Chance, F. Crosbie, O. C. S. Tandy, G. G. P. Beckett, H. G. Holdbrook, W. A. Taylor, S. A. Lane, R. G. M'Entire, L. Shiel, J. C. Kelly.

INTERMEDIATE MEDICAL *(Part II).*—*H. L. W. Woodroffe, R. W. Murphy, A. F. B. Shaw, H. J. Smyly, F. C. Crossle, J. M. Elliott, H. M. Fleming, T. G. Harpur, A. E. Malone, C. O'Brien, Mary G. Caskey, G. J. Meldon, E. N. Bateman, G. G. P. Beckett, F. Crosbie, M. M'Knight, J. Beckett, R. G. M'Entire.

FINAL *(Part II, Midwifery).*—*T. A. Hughes, *D. M. Moffatt, *C. P. Smyly, H. R. Kenny, W. P. H. Smiley, D. Drew, J. P. R. Poch, B. H. Moore, W. R. Allen, C. G. S. Baronsfeather, P. H. Lemass, D. J. Stokes, W. D. Mitchell, H. S. Metcalfe, J. E. N. Ryan.

* Passed on high marks.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

FIRST M.B. *(All Subjects).*—W. S. Murray.

Elementary Anatomy and Biology.—R. E. Bell, G. A. Berkeley-Cole, G. Carse, H. G. Dodd, C. Duncan, I. D. Evans, R. A. Hooper, R. L. Kitching, Nora Murphy, Carinna A. B. O'Neill, A. Patterson, L. G. Pearson, J. M. Phillips-Jones, E. Ritson, D. C. Scott, C. O. Shackleton, A. Sutcliff.

Chemistry and Physics.—E. Babst, P. Gunn, F. W. C. Hinings, S. E. Murray, C. T. G. Pearce, S. Scott, A. Smith, H. J. Shanley.

Chemistry, Elementary Anatomy, and Biology.—J. S. Arkle.

Elementary Anatomy.—W. A. Elliott.

SECOND M.B. *(Anatomy, Physiology, and Materia Medica).*—*S. P. Bedson, B.Sc., F. E. Chapman, W. L. Clements, H. Fairclough, L. E. S. Gellé, J. K. J. Haworth, W. J. Hickey, E. Kidd, W. G. Lidderdale, C. Mearns, B. B. Noble, J. A. C. Scott, W. A. Slater, R. W. Smith, R. V. Steele, H. R. G. Vander Beken.

THIRD M.B. *(Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology).*—*W. G. Bendle, B. G. H. Connolly, R. Errington, F. P. Evers, E. L. Hancock, H. T. Hunter, Eva Lumb, E. P. Martin, A. T. Thompson, T. R. West.

* Second-class honours.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examinations indicated:

SECOND M.B., CH.B.—K. D. Bean, C. E. Butterworth, C. W. Fort, *A. H. Holmes, L. W. Howlett, *†W. H. Kauntze, W. H. Laslett, T. W. Martin, N. Matthews, F. Oppenheimer, H. G. Peake, S. B. Radley, J. Rothwell, C. M. Stallard, W. Stirling, J. S. B. Stopford, H. D. Willis.

THIRD M.B., CH.B.—*A. E. Ainscow, R. Briercliffe, S. J. Clegg, J. Cowan, C. Davies, C. B. Davies, H. A. Dunkerley, E. R. Eatock, A. W. Gaye, E. Grey, H. Heathcote, *R. C. Hutchinson, R. B. Jackson, G. Lapage, Mabel E. May, A. Reid, J. R. Rigg, J. B. Scott, *W. A. Sneath, J. Walker, Charlotte E. Warner.

FINAL M.B. AND CH.B. *(Forensic Medicine and Toxicology).*—*H. E. Allanson, Estelle I. E. Atkinson, G. M. Benton, *C. G. Brentnall, W. A. Bullough, J. F. Cocker, *D. I. Connolly, G. T. Cregan, *F. H. Diggle, J. Gow, *T. T. Higgins, R. A. Jackson, N. T. K. Jordan, N. McDonald, *Edith M. Marsden, *C. B. Marshall, G. E. E. Nicholls, H. Platt, *A. Porter, *A. A. Smalley, *N. Tattersall, R. H. Titcombe, W. B. Wamsley, *J. F. Ward, *F. G. Wrigley.

FINAL M.B., CH.B. *(All Subjects).*—J. A. Bateman, N. Booth. *E. Howe, M. C. S. Lawrance, T. M. Popple, J. Ramsbottom, *‡B. W. E. Trevor-Roper, W. W. Uttley, H. V. White, J. Whitehead.

* With distinction in one or more subjects. † University medal.
‡ Second-class honours.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held at the College on Monday, April 5th, the President, Sir R. Douglas Powell, in the chair.

University of Geneva.

The President announced that he had appointed Dr. Pasteur to represent the College at the commemoration of the 350th anniversary of the University of Geneva to be held in July next.

Presidential Address.

The President gave his annual address, in which he offered congratulations to the diplomates of the College who had gained distinctions, and referred to the lectures that had been delivered and the gifts accepted by the College during the past academic year. He gave brief obituary notices of the ten Fellows of the College who had died during the same period, these being Drs. Cullingworth, Rickards, Bertram Abrahams, and Ashby, Sir T. Stevenson, Sir Henry Pitman, and Drs. C. E. Beevor, Horrocks, Cotes, and Arthur Gamgee.

Election of President.

Sir Douglas Powell then vacated the chair and voting took place for the post of President for the ensuing year. Sir Douglas Powell was re-elected by an almost unanimous vote.

Communications.

The following communications were received:

1. From the Secretary of the College of Surgeons, reporting proceedings of the Council on February 11th and April 1st last.

2. From Miss Amy Maxwell, offering through Sir William Allchin for the acceptance of the College a photographic copy of a miniature portrait of her grandfather, Dr. Anthony Todd Thomson, a former Fellow of the College. The gift was accepted, and thanks returned to the donor.

Admission of Women to the Examinations of the College.

The following by-law was enacted for the first time:

Women shall be eligible for admission as Licentiates and Members of the College and for the grant of a Diploma in Public Health on the same terms and conditions as men, and so far as is necessary to give effect to this By-law, words in the By-laws and Regulations importing the masculine gender shall include females, and all proper alterations shall be made in the forms of the Letters Testimonial and the Licence granted by the College.

Provided always that women shall not be eligible for election as Fellows of the College, or be entitled to take part in the government, management, or proceedings of the College.

Anniversary of the Birth of Dr. Caius.

The Harveian Librarian, Dr. F. Payne, announced that the year 1910 would be the 400th anniversary of the birth of Dr. Caius, a former distinguished President of the College, and on his recommendation it was resolved to co-operate with Caius College, Cambridge, in reprinting the works of Dr. Caius to commemorate the occasion.

Report.

A report was received from the Committee of Management recommending that the University of St. Andrews be added to the list of institutions at which the complete curriculum of professional study required for the diplomas of the Royal Colleges may be pursued, and whose graduates may be admitted to the Final Examination of the Examining Board in England on production of the required certificates of study.

The recommendation was adopted.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on April 1st, Mr. Henry Morris, President, in the chair.

The late Mr. James Hardie.

A vote of condolence was passed to the relatives of Mr. Jame Hardie, of Manchester, lately deceased, a past member o council.

Entozoa in the Museum.

Dr. R. T. Leiper, of the London School of Tropical Medicine, was appointed to revise and renovate the collection of entozoa in the College museum.

Jacksonian Prize.

The Jacksonian Prize was awarded to Mr. J. P. Lockhart Mummery, F.R.C.S., for his essay on Diseases of the Colon Relievable by Operation. The subject chosen for the next essay is Tuberculous Disease of the Urinary Bladder and Male Genital Organs.

Court of Examiners.

The vacancy on the Court of Examiners, occasioned by the retirement of Mr. Gould, will be filled up at the council meeting on May 13th. Mr. Gould is not applying for re-election.

The Geneva Celebration.

Sir Jonathan Hutchinson was nominated as the delegate of the College to the University of Geneva on the occasion of the celebration of the 350th anniversary of its foundation, from July 7th to July 10th, 1909.

Representative of Midwives Board.

The best thanks of the council were given to Mr. Ward Cousins for his very efficient services as representative of the College on the Central Midwives Board during the past six years. Mr. C. H. Golding-Bird was elected in Mr. Ward Cousins's place. In his annual report, Mr. Ward Cousins points out that the number of deaths attending childbirth has not diminished since the Midwives Act came into operation in April, 1903; no guarantee at present exists for the payment of medical practitioners who are summoned to assist certified midwives, and in consequence serious trouble in all parts of the country still exists; hence the Act requires considerable alteration. The details will be submitted to the Departmental Committee appointed by the Government, and, he reports, there is every reason to hope that the defects will be removed.

John Tomes Prize.

The John Tomes Prize was awarded to Mr. Arthur Swayne Underwood.

University of London.

Mr. H. H. Clutton was reappointed one of the two representatives of the College on the Senate of the University of London.

Election of Fellows.

The following Members of twenty years' standing were elected Fellows of the College: Sir Shirley Forster Murphy, Medical Officer of Health for the County of London; George Dancer Thane, Professor of Anatomy, University College, London.

Admission of Women.

The formulae for the alteration of Section XXI and for a new Section XXVI (Admission of Women) were approved; and the Solicitor of the College was instructed to submit the new by-laws to the proper authorities for sanction and ratification.

Medico-Legal.

INQUESTS ON CASES OF DEATH AFTER OPERATION.

The following reports of inquests on cases of death after operation deserve, we think, to be brought to the attention of our readers. The inquests were held some time ago, but it is only recently that we have been able to obtain reports sufficiently full to show the mode of procedure adopted by the Coroner for Westminster and the South-West District of London. The reports, which are taken from the *South-Western Star*, have been in each case authenticated by the surgeon who operated. Mr. Sampson Handley informs us that the report of his case is quite accurate; Mr. Swainson has corrected the report of his case in one or two points.

Mr. Sampson Handley's Case.

The following report is abbreviated from the *South-Western Star* of January 1st, 1909:

Mr. Troutbeck held an inquest at the Battersea Coroner's Court on Monday (December 28th, 1908) with reference to the death of Henry Fielder Trigg, a butcher, aged 53, late of 7, Eglantine Road, Wandsworth, who died at Bolingbroke Hospital on December 22nd, after a serious operation. Lionel Harry Trigg, mason, a son of the deceased, stated that his father had been in excellent health until three months ago, when he complained of internal pains. He was attended by Dr. Archer, of East Hill, for some weeks, after which he went to St. Peter's Hospital, Covent Garden, where he stopped a fortnight. Not getting any better he applied for and was granted admission to Bolingbroke Hospital. A week after his admission an operation was suggested, and the deceased agreed to it. Asked by the coroner if he understood that his father was in a serious condition, the witness replied in the affirmative. Asked further if he thought the operation would give him a chance of life, the witness said, Yes. Mr. W. Sampson Handley, M.S., F.R.C.S., surgeon at Bolingbroke Hospital and assistant surgeon at Middlesex Hospital, stated that when he examined deceased by means of the electric light he discovered a growth in the bladder. He cut open the bladder, thinking he could remove the growth, but found that it was irremovable, and that the only means was to remove the whole bladder. He knew this was an extremely dangerous operation, and explained this to deceased, who gave his consent for the operation to be performed. "I told him," witness said, "that I would not perform the operation except at his request." He was in a miserable condition. Asked by the coroner if that was an operation that was very often performed, Mr. Sampson Handley said it was performed sometimes. Continuing, he said that he performed the operation on December 22nd. He removed the whole bladder, and made an artificial one from a portion of the intestine. Deceased died shortly after the operation. The witness was not present when he died. Asked if the patient was under an anaesthetic, Mr. Sampson Handley said he was under a mixture of choloform and ether. The cause of death, in his opinion, was partly due to the state of his health produced by the growth. The immediate case of death was shock caused by the operation. It was a cancerous growth. Asked by the coroner if he was able to form an opinion of the probable length of time the man would have lived if the operation had not been performed, Mr. Sampson Handley said "about two or three months, but he would have been in agony all the time." In reply to further questions, he said that if the operation had been successful it might have prolonged his life for years if there were no other growths in the body. Asked if there had been cases of a successful operation, the witness said, "Yes; and the patient had been cured and has lived for years in comfort." Asked if he thought the anaesthetic affected the matter in any way, Mr. Sampson Handley replied that it was very hard to say. He did not think it did. Dr. Freyberger, who made the *post-mortem* examination, stated that death was caused by sudden failure of the heart in consequence of the shock of a prolonged operation, while deceased was suffering from the effects of cancer. In reply to the coroner, who asked: "As far as the history of this class of operation is concerned, is it one that has been performed for any considerable time?" the witness replied: "About fifteen years I should say." The coroner (addressing the jury) said that there could be no doubt that Mr. Handley was justified in undertaking the operation in the circumstances. The jury returned a verdict of "Accidental death."

Mr. Swainson's Case.

The following corrected report is abridged from the *South-Western Star* of January 29th, 1909:

On Wednesday (January 27th) an inquest was held at the Battersea Coroner's Court before Mr. Troutbeck on the body of James Arthur Searle, aged 8 years, whose parents live at 8, Winifred Grove, Battersea. On the previous Saturday deceased underwent an operation at Bolingbroke Hospital, and died soon afterwards. James Searle, a compositor, identified the body as that of his son. He had had fair health, but Dr. Wallace had attended him for about two years. On Thursday deceased complained of pain in the stomach, and witness thought it was ordinary stomach-ache. The child had not eaten anything unwholesome as far as witness knew. That night he saw a doctor and described the symptoms. Some medicine was prescribed for him. Next day the boy seemed better. On Saturday morning he was very bad, and when witness had gone to work his wife called in the doctor. When he got home at dinner time witness found deceased was worse. The doctor came about 4 o'clock, and diagnosed the case as one of appendicitis, and advised removal to a hospital for operation. The boy was hurried off to Bolingbroke Hospital in a cab, and handed over to the doctors for the purpose of an operation. About 6 o'clock witness was informed that deceased had died, having been in the hospital about an hour. (The time was really about two hours.) In reply to the coroner, who asked when he handed the boy over to the doctors if he thought he was likely to die, the witness said he knew that an operation was his only chance. Asked if he had anything else to say about the death, he said, No. He thought the hospital authorities did their very best, and did it well. All he complained of was the inquest. The coroner said: "It is a duty. I am afraid every one has to obey the law, even if it is disagreeable." Annie Marie Searle, the mother, agreed with her husband that the deceased was taken to the hospital as the only chance of saving his life. As a matter of fact, she thought he was dying before he was taken away. Dr. J. B. Wallace, 117, North Side, Clapham Common, said deceased was a very delicate boy, and of exceedingly poor physique. When the child was brought to him suffering from the stomach-ache he thought it was an ordinary bilious attack. When he saw deceased on Saturday afternoon he was in a state of collapse. The boy's condition struck him as that of appendicitis, and an immediate operation was the only chance of saving his life. Dr. Aitkin, medical superintendent at Bolingbroke Hospital, said deceased was admitted shortly after 4 o'clock on Saturday. He was suffering from what was known as an "acute abdomen," which was swollen. He told the parents that an immediate operation was the only chance of saving the child's life. They consented, and the child was got ready. He was given chloroform with a slight mixture of ether. He took it very nicely and needed very little anaesthetic. The abdomen was full of blood-stained fluid. A gangrenous portion of bowel was removed and the bowel drained. The whole thing took twenty-five minutes, and the deceased breathed quietly at the finish. He was removed to the ward about 5.35 and died about 10 minutes to 6. Death was due to strangulation of the bowel and peritonitis. The operation shortened his life by a few hours. If he had remained at home he would have lived about six hours. Mr. Swainson, Surgeon to Bolingbroke Hospital, and Assistant Surgeon to the Westminster Hospital, said he undertook the operation. It was clear that deceased had peritonitis, which was probably caused by appendicitis. When he opened the abdomen he found 10 or 12 in. of gangrenous bowel, which made the case very grave indeed. In his opinion death was due to peritonitis and toxaemia. After the child was admitted in a collapsed state he had reacted to restoratives, and it was hoped that after the operation he would again react to restoratives, which were applied, but with no effect. Therefore there was small chance of saving the child's life. Dr. Freyberger said death was due to failure of the heart in consequence of collapse caused by the gangrenous state of the bowel. He could not entirely dissociate from the death the shock caused by the anaesthetic. The coroner said that, although objection was sometimes taken by relatives and others to the holding of inquests, the law was perfectly clear on the subject, and the duty of attending inquests and giving evidence, although it might be disagreeable, was one which had to be faced. These inquiries were primarily for the benefit of the public, but they were, perhaps, of even greater benefit to medical men who had conducted operations, and who were given this opportunity of seeing that they had taken the right course. It was a great satisfaction to them to hear a jury express approval of their efforts at a public inquiry. In this case the operation was fully justified, and death could not reasonably be prevented. The jury returned a verdict of "Accidental death."

UNREGISTERED DENTISTS.

In our last issue proceedings against the Hygienic Institute were reported in two cases in which damages were claimed and awarded.

At Bishop Auckland Petty Sessions on April 1st, Robert Smith, local manager of the Hygienic Institute, was summoned, at the instance of the British Dental Association, for having unlawfully represented himself to be a duly qualified and registered dentist, contrary to the Dentists Act, 1878. Mr. R. Luck, barrister, instructed by Mr. W. Wilkinson, Bishop Auckland, prosecuted; and Mr. Mundahl, barrister, instructed by Mr. R. S. Holmes, Newcastle-on-Tyne, defended.

Evidence was given by two police constables, who, disguised as workmen, visited the local branch of the Hygienic Institute, at the door of which was a plate bearing the inscription, "Hygienic Institute, Makers of High-class Artificial Teeth." On a landing inside the house was a board with the words, "Hygienic Institute. R. Smith, manager."

Constable Pakes said when he went in he asked for the dentist, when the defendant appeared. He said to him, "Are you the dentist?" the reply of Smith being, "I am." Smith examined his mouth and advised him to have a tooth drawn. Witness asked if it would cause pain, and Smith replied that he thought he could take it out absolutely painlessly, and that

the price would be a shilling. He was shown into a room marked "Private," where an operator named Macdonald assured him there would be no pain whatever, but added that he would inject some stuff into the gum as a precaution, as it would deaden any pain. Smith held his head while the extraction was taking place. Afterwards Macdonald asked him if he would have another tooth drawn, as there was one which ought to come out, but witness declined.

Constable Parkinson corroborated. He said the extraction took place under Smith's supervision. As to his own teeth, when Smith had examined his mouth, he said, "You are a case for the 'Hygienic,' you are! all yours want to come out. I will put in a full set, top and bottom, for £6." Witness said that was a lot of money, whereupon Smith said that he could pay a certain sum down and the remainder the collector could call for at the rate of 3s. a fortnight. He asked Smith what that stuff was that the operator had injected into his chum's gum, and Smith replied: "That is a trade secret. Any dentist in Bishop Auckland would give £100 to know what it is."

Mr. Jonathan Townend, Bishop Auckland, who laid the information on behalf of the British Dental Association, proved that neither Smith's nor Macdonald's names were on the *Dentists Register*.

Mr. Mundahl submitted that the defendant had not implied that he was a registered dentist. He contended that any one could supply artificial teeth. Defendant was not a dentist, but simply a business manager, and had never represented that he was qualified.

Defendant stated that he had never been a dentist, and had never drawn a tooth. He would never think of representing that he was a dentist. He did not tell the men that he was a dentist, nor did he say that the teeth would be drawn painlessly. He never supposed that what he did would lead to the supposition that he was duly qualified. In cross-examination by Mr. Luck, defendant said he had been in the service of the Hygienic Institute for about a year, and at Auckland since November. Before that he was a traveller. He appeared reluctant to say in what line of business he had travelled, but, when pressed, he admitted that he had represented a firm of wholesale fruit merchants. He declined, by advice of his counsel, to answer the question as to whether there was a registered dental practitioner on the premises at Bishop Auckland.

Mr. Luck: Is it part of the business of the institute to extract teeth painlessly and to use an anaesthetic?—Witness: We extract teeth and use an anaesthetic.

Is it part of the business of the institute to extract teeth painlessly?—It is our duty to give as little pain as possible.

If you had nothing to do with the operation, why did you stay in the operating room?—Because I had a right to be on the premises.

Why did you go there if you had nothing to do with it?—The operator is under my instruction with regard to his work.

The bench fined defendant £5, with £3 13s. costs, including the prosecuting counsel's fee, and declined to state a case for a High Court on the question of the defendant's representation that he was a dentist, having found it a fact that he had done so, but agreed to state a case on a question of law.

A second summons against the defendant in respect of P.C. Parkinson was withdrawn on payment of costs.

FEES OF MEDICAL WITNESSES.

N. F. writes that he is likely to be called in a divorce case as a medical witness to prove cruelty, but has not yet received a subpoena. He wishes to know whether there is a fixed scale for medical witnesses, or has the amount to be a matter of arrangement between the doctor and solicitors.

*** There is a fixed scale laid down by the court, and our correspondent, if legally subpoenaed, could recover his fees on that scale. But it often happens that the fees allowed on this scale are insufficient to repay the medical witness for his time and labour. Where this is the case the medical witness should have a written agreement from the patient or his solicitors to pay him his charges when they are in excess of the authorized scale.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

COMMISSION TO ASSISTANTS.

ORNIS asks at what rate commission is paid to an assistant for extra work, such as midwifery, introducing fresh patients, etc.

*** The salary of a medical assistant should be inclusive of everything. In some cases a small percentage is allowed by the principal on midwifery, but we have never heard of any commission being paid for the introduction of patients.

CONDUCT OF MEDICAL OFFICERS OF ACCIDENT INSURANCE COMPANIES.

J. C. E.—We have repeatedly drawn attention to the obligation which rests upon the practitioner sent on behalf of the employer or insurance company to give notice to the patient of his intended visit, so that the practitioner in attendance can be present. The omission to give this notice is to be deplored, as such unannounced intrusion invariably gives offence and wantonly disturbs the harmonious relations that should exist between members of the same profession.

THE ETHICS OF CONSULTATION.

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Medico-Legal.

INQUESTS ON CASES OF DEATH AFTER OPERATION.

THE following reports of inquests on cases of death after operation deserve, we think, to be brought to the attention of our readers. The inquests were held some time ago, but it is only recently that we have been able to obtain reports sufficiently full to show the mode of procedure adopted by the Coroner for Westminster and the South-West District of London. The reports, which are taken from the *South-Western Star*, have been in each case authenticated by the surgeon who operated. Mr. Sampson Handley informs us that the report of his case is quite accurate; Mr. Swainson has corrected the report of his case in one or two points.

MR. SAMPSON HANDLEY'S CASE.

The following report is abbreviated from the *South-Western Star* of January 1st, 1909:

Mr. Troutbeck held an inquest at the Battersea Coroner's Court on Monday (December 28th, 1908) with reference to the death of Henry Fielder Trigg, a butcher, aged 53, late of 7, Eglantine Road, Wandsworth, who died at Bolingbroke Hospital on December 22nd, after a serious operation. Lionel Harry Trigg, mason, a son of the deceased, stated that his father had been in excellent health until three months ago, when he complained of internal pains. He was attended by Dr. Archer, of East Hill, for some weeks, after which he went to St. Peter's Hospital, Covent Garden, where he stopped a fortnight. Not getting any better he applied for and was granted admission to Bolingbroke Hospital. A week after his admission an operation was suggested, and the deceased agreed to it. Asked by the coroner if he understood that his father was in a serious condition, the witness replied in the affirmative. Asked further if he thought the operation would give him a chance of life, the witness said, Yes. Mr. W. Sampson Handley, M.S., F.R.C.S., surgeon at Bolingbroke Hospital and assistant surgeon at Middlesex Hospital, stated that when he examined deceased by means of the electric light he discovered a growth in the bladder. He cut open the bladder, thinking he could remove the growth, but found that it was irremovable, and that the only means was to remove the whole bladder. He knew this was an extremely dangerous operation, and explained this to deceased, who gave his consent for the operation to be performed. "I told him," witness said, "that I would not perform the operation except at his request." He was in a miserable condition. Asked by the coroner if that was an operation that was very often performed, Mr. Sampson Handley said it was performed sometimes. Continuing, he said that he performed the operation on December 22nd. He removed the whole bladder, and made an artificial one from a portion of the intestine. Deceased died shortly after the operation. The witness was not present when he died. Asked if the patient was under an anaesthetic, Mr. Sampson Handley said he was under a mixture of choloform and ether. The cause of death, in his opinion, was partly due to the state of his health produced by the growth. The immediate case of death was shock caused by the operation. It was a cancerous growth. Asked by the coroner if he was able to form an opinion of the probable length of time the man would have lived if the operation had not been performed, Mr. Sampson Handley said "about two or three months, but he would have been in agony all the time." In reply to further questions, he said that if the operation had been successful it might have prolonged his life for years if there were no other growths in the body. Asked if there had been cases of a successful operation, the witness said, "Yes; and the patient had been cured and has lived for years in comfort." Asked if he thought the anaesthetic affected the matter in any way, Mr. Sampson Handley replied that it was very hard to say. He did not think it did. Dr. Freyberger, who made the *post-mortem* examination, stated that death was caused by sudden failure of the heart in consequence of the shock of a prolonged operation, while deceased was suffering from the effects of cancer. In reply to the coroner, who asked: "As far as the history of this class of operation is concerned, is it one that has been performed for any considerable time?" the witness replied: "About fifteen years I should say." The coroner (addressing the jury) said that there could be no doubt that Mr. Handley was justified in undertaking the operation in the circumstances. The jury returned a verdict of "Accidental death."

MR. SWAINSON'S CASE.

The following corrected report is abridged from the *South-Western Star* of January 29th, 1909:

On Wednesday (January 27th) an inquest was held at the Battersea Coroner's Court before Mr. Troutbeck on the body of James Arthur Searle, aged 8 years, whose parents live at 8, Winifred Grove, Battersea. On the previous Saturday deceased underwent an operation at Bolingbroke Hospital, and died soon afterwards. James Searle, a compositor, identified the body as that of his son. He had had fair health, but Dr. Wallace had attended him for about two years. On Thursday deceased complained of pain in the stomach, and witness thought it was ordinary stomach-ache. The child had not eaten anything unwholesome as far as witness knew. That night he saw a doctor and described the symptoms. Some medicine was prescribed for him. Next day the boy seemed better. On Saturday morning he was very bad, and when witness had gone to work his wife called in the doctor. When he got home at dinner time witness found deceased was worse. The doctor came about 4 o'clock, and diagnosed the case as one of appendicitis, and advised removal to a hospital for operation. The boy was hurried off to Bolingbroke Hospital in a cab, and handed over to the doctors for the purpose of an operation. About 6 o'clock witness was informed that deceased had died, having been in the hospital about an hour. (The time was really about two hours.) In reply to the coroner, who asked when he handed the boy over to the doctors if he thought he was likely to die, the witness said he knew that an operation was his only chance. Asked if he had anything else to say about the death, he said, No. He thought the hospital authorities did their very best, and did it well. All he complained of was the inquest. The coroner said: "It is a duty. I am afraid every one has to obey the law, even if it is disagreeable." Annie Marie Searle, the mother, agreed with her husband that the deceased was taken to the hospital as the only chance of saving his life. As a matter of fact, she thought he was dying before he was taken away. Dr. J. B. Wallace, 117, North Side, Clapham Common, said deceased was a very delicate boy, and of exceedingly poor physique. When the child was brought to him suffering from the stomach-ache he thought it was an ordinary bilious attack. When he saw deceased on Saturday afternoon he was in a state of collapse. The boy's condition struck him as that of appendicitis, and an immediate operation was the only chance of saving his life. Dr. Aitkin, medical superintendent at Bolingbroke Hospital, said deceased was admitted shortly after 4 o'clock on Saturday. He was suffering from what was known as an "acute abdomen," which was swollen. He told the parents that an immediate operation was the only chance of saving the child's life. They consented, and the child was got ready. He was given chloroform with a slight mixture of ether. He took it very nicely and needed very little anaesthetic. The abdomen was full of blood-stained fluid. A gangrenous portion of bowel was removed and the bowel drained. The whole thing took twenty-five minutes, and the deceased breathed quietly at the finish. He was removed to the ward about 5.35 and died about 10 minutes to 6. Death was due to strangulation of the bowel and peritonitis. The operation shortened his life by a few hours. If he had remained at home he would have lived about six hours. Mr. Swainson, Surgeon to Bolingbroke Hospital, and Assistant Surgeon to the Westminster Hospital, said he undertook the operation. It was clear that deceased had peritonitis, which was probably caused by appendicitis. When he opened the abdomen he found 10 or 12 in. of gangrenous bowel, which made the case very grave indeed. In his opinion death was due to peritonitis and toxaemia. After the child was admitted in a collapsed state he had reacted to restoratives, and it was hoped that after the operation he would again react to restoratives, which were applied, but with no effect. Therefore there was small chance of saving the child's life. Dr. Freyberger said death was due to failure of the heart in consequence of collapse caused by the gangrenous state of the bowel. He could not entirely dissociate from the death the shock caused by the anaesthetic. The coroner said that, although objection was sometimes taken by relatives and others to the holding of inquests, the law was perfectly clear on the subject, and the duty of attending inquests and giving evidence, although it might be disagreeable, was one which had to be faced. These inquiries were primarily for the benefit of the public, but they were, perhaps, of even greater benefit to medical men who had conducted operations, and who were given this opportunity of seeing that they had taken the right course. It was a great satisfaction to them to hear a jury express approval of their efforts at a public inquiry. In this case the operation was fully justified, and death could not reasonably be prevented. The jury returned a verdict of "Accidental death."

UNREGISTERED DENTISTS.

IN our last issue proceedings against the Hygienic Institute were reported in two cases in which damages were claimed and awarded.

At Bishop Auckland Petty Sessions on April 1st, Robert Smith, local manager of the Hygienic Institute, was summoned, at the instance of the British Dental Association, for having unlawfully represented himself to be a duly qualified and registered dentist, contrary to the Dentists Act, 1878. Mr. R. Luck, barrister, instructed by Mr. W. Wilkinson, Bishop Auckland, prosecuted; and Mr. Mundahl, barrister, instructed by Mr. R. S. Holmes, Newcastle-on-Tyne, defended.

Evidence was given by two police constables, who, disguised as workmen, visited the local branch of the Hygienic Institute, at the door of which was a plate bearing the inscription, "Hygienic Institute, Makers of High-class Artificial Teeth." On a landing inside the house was a board with the words, "Hygienic Institute. R. Smith, manager."

Constable Pakes said when he went in he asked for the dentist, when the defendant appeared. He said to him, "Are you the dentist?" the reply of Smith being, "I am." Smith examined his mouth and advised him to have a tooth drawn. Witness asked if it would cause pain, and Smith replied that he thought he could take it out absolutely painlessly, and that

the price would be a shilling. He was shown into a room marked "Private," where an operator named Macdonald assured him there would be no pain whatever, but added that he would inject some stuff into the gum as a precaution, as it would deaden any pain. Smith held his head while the extraction was taking place. Afterwards Macdonald asked him if he would have another tooth drawn, as there was one which ought to come out, but witness declined.

Constable Parkinson corroborated. He said the extraction took place under Smith's supervision. As to his own teeth, when Smith had examined his mouth, he said, "You are a case for the 'Hygienic,' you are! all yours want to come out. I will put in a full set, top and bottom, for £6." Witness said that was a lot of money, whereupon Smith said that he could pay a certain sum down and the remainder the collector could call for at the rate of 3s. a fortnight. He asked Smith what that stuff was that the operator had injected into his chum's gum, and Smith replied: "That is a trade secret. Any dentist in Bishop Auckland would give £100 to know what it is."

Mr. Jonathan Townend, Bishop Auckland, who laid the information on behalf of the British Dental Association, proved that neither Smith's nor Macdonald's names were on the *Dentists Register*.

Mr. Mundahl submitted that the defendant had not implied that he was a registered dentist. He contended that any one could supply artificial teeth. Defendant was not a dentist, but simply a business manager, and had never represented that he was qualified.

Defendant stated that he had never been a dentist, and had never drawn a tooth. He would never think of representing that he was a dentist. He did not tell the men that he was a dentist, nor did he say that the teeth would be drawn painlessly. He never supposed that what he did would lead to the supposition that he was duly qualified. In cross-examination by Mr. Luck, defendant said he had been in the service of the Hygienic Institute for about a year, and at Auckland since November. Before that he was a traveller. He appeared reluctant to say in what line of business he had travelled, but, when pressed, he admitted that he had represented a firm of wholesale fruit merchants. He declined, by advice of his counsel, to answer the question as to whether there was a registered dental practitioner on the premises at Bishop Auckland.

Mr. Luck: Is it part of the business of the institute to extract teeth painlessly and to use an anaesthetic?—Witness: We extract teeth and use an anaesthetic.

Is it part of the business of the institute to extract teeth painlessly?—It is our duty to give as little pain as possible.

If you had nothing to do with the operation, why did you stay in the operating room?—Because I had a right to be on the premises.

Why did you go there if you had nothing to do with it?—The operator is under my instruction with regard to his work.

The bench fined defendant £5, with £3 13s. costs, including the prosecuting counsel's fee, and declined to state a case for a High Court on the question of the defendant's representation that he was a dentist, having found it a fact that he had done so, but agreed to state a case on a question of law.

A second summons against the defendant in respect of P.C. Parkinson was withdrawn on payment of costs.

FEES OF MEDICAL WITNESSES.

N. F. writes that he is likely to be called in a divorce case as a medical witness to prove cruelty, but has not yet received a subpoena. He wishes to know whether there is a fixed scale for medical witnesses, or has the amount to be a matter of arrangement between the doctor and solicitors.

*** There is a fixed scale laid down by the court, and our correspondent, if legally subpoenaed, could recover his fees on that scale. But it often happens that the fees allowed on this scale are insufficient to repay the medical witness for his time and labour. Where this is the case the medical witness should have a written agreement from the patient or his solicitors to pay him his charges when they are in excess of the authorized scale.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

COMMISSION TO ASSISTANTS.

ORNIS asks at what rate commission is paid to an assistant for extra work, such as midwifery, introducing fresh patients, etc.

*** The salary of a medical assistant should be inclusive of everything. In some cases a small percentage is allowed by the principal on midwifery, but we have never heard of any commission being paid for the introduction of patients.

CONDUCT OF MEDICAL OFFICERS OF ACCIDENT INSURANCE COMPANIES.

J. C. E.—We have repeatedly drawn attention to the obligation which rests upon the practitioner sent on behalf of the employer or insurance company to give notice to the patient of his intended visit, so that the practitioner in attendance can be present. The omission to give this notice is to be deplored, as such unannounced intrusion invariably gives offence and wantonly disturbs the harmonious relations that should exist between members of the same profession.

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the electric current in muscles. He early turned his attention to the chemical side of physiology, and in 1880 published the first volume of his important work, *A Textbook of the Physiological Chemistry of the Animal Body*, the second volume of which did not appear until 1893, and embodied investigations which he conducted in the laboratory of his friend Professor Hugo Kronecker at Berne.

Soon after the appearance of the first volume of this work, Gamgee decided to relinquish the teaching of physiology and to devote himself mainly to the practice of medicine, and with this object in view he resigned the Brackenbury chair at Manchester and migrated to London, where he obtained the appointments of Assistant Physician and Lecturer on Materia Medica at St. George's Hospital. But in spite of some success in practice in London, he was compelled by ill health before very long to resign his hospital appointments and to seek opportunities elsewhere. After trying one or two localities in this country and in Switzerland he finally settled down in practice in Montreux, and it was here that most of the remainder of his life was spent. Three or four years ago, however, he was attracted by an offer from the Carnegie Institute of Washington to inspect on behalf of the institute the facilities for conducting researches in metabolism, calorimetry and allied subjects which were to be found in European universities, with a view to reporting on the best mode by which investigations might be carried on by the institute. He accordingly gave up his practice in Switzerland and spent several months in this, to him, congenial task. On the completion he was so deeply interested in the subject of animal heat and calorimetry that he set to work, with the aid of Mr. Horace Darwin and the Cambridge Scientific Instrument Company, to devise a means of continuous registration of the temperature of the human body, and upon this he was in fact engaged at the time of his death. An account of his apparatus together with some preliminary results, was published last year in the *Philosophical Transactions* (see also this JOURNAL of December 3rd, 1908).

But scientific investigations are not an adequate means of livelihood in this country, and Gamgee was constrained once more to settle down in practice in London, whilst continuing in Dr. Waller's laboratory at the University of London the work on temperature with which he had already achieved interesting results at Cambridge—a project which has been frustrated by his untimely death.

From 1882 to 1885 Gamgee was Fullerian Professor of Physiology at the Royal Institution of Great Britain. He was a Fellow of the Royal Society, and in 1902 delivered before it the Croonian Lecture on the chemical and physical properties of haemoglobin. He was elected Fellow of the Royal College of Physicians in 1896.

He was an honorary LL.D. of the University of Edinburgh, and last year received the honorary degree of D.Sc. from the University of Manchester. In the course of the observations with which he was presented for this degree, Professor Lamb said: "In Arthur Gamgee we welcome an old colleague who for many years illustrated the Chair of Physiology in the Owens College, and whose services in the establishment of the former Victoria University and in the securing of its medical charter are not lightly to be forgotten."

He was an accomplished linguist, and was selected by the Council of the Royal Society to represent that society at Berne last November on the occasion of the bicentenary celebration of the birth of Albrecht von Haller. The lecture-address which he presented on behalf of the society was composed by himself and delivered with the purest Italian pronunciation in a characteristic dramatic manner, which produced a great effect upon the large and distinguished audience which had assembled to do honour to the father of modern physiology.

Dr. J. G. MCKENDRICK (Emeritus Professor of Physiology in the University of Glasgow) has written the following in response to our request: The foregoing account of the leading events in the life of Arthur Gamgee, accurate as it is, cannot convey an adequate idea of the singular versatility and brilliancy of the man. The writer became acquainted with him about forty years ago. He was then justly regarded as one of the ablest of the younger men connected with the Edinburgh Medical School. Imbued with a love of science for its own sake, he attacked many questions with youthful enthusiasm and energy. He was one of the first in this country to recognize the importance of the chemical investigation of some of the phenomena of life, and he prepared himself for work of this kind by becoming an expert analyst, more especially in the obscure domain of organic chemistry. He saw that the methods of du Bois Reymond, Helmholtz, and Ludwig had their limitations, and that new vistas of discovery and new methods of investigation were opening up to the physiologist. The training he gave himself in physics, and in physical methods, was also varied and extensive. In those days he was in close touch with such men as Peter Guthrie Tait, James Dewar, and Matthews Duncan, and no doubt he was inspired by their zeal and example. He rendered a great service to physiological science by translating *Hermann's Physiology*, the first textbook of physiology that gave due importance to the laws of the conservation of energy as applied to living beings. That book was, in a sense, epoch-making, inasmuch as it presented to the student many of the phenomena of life in a new aspect. Gamgee was an excellent teacher. He had an easy flow of language, sometimes almost too exuberant, and he spoke with the fervour of one who was deeply interested in his subject. His career after leaving Edinburgh was marked by many vicissitudes and trials, and not a few felt that his devotion to science and his rare intellectual gifts did not always obtain adequate recognition. This was largely due to peculiarity of temperament, and especially to a restlessness not infrequently associated with genius. No one can doubt that Gamgee had not a little of the speculative daring of genius combined with an indefatigable industry in experimental work. Altogether he was a singularly gifted man. An accomplished linguist in at least four European languages, he was also an excellent classical scholar, and, as has already been pointed out, he had a grip of physics and chemistry, in their bearing on physiological questions, such as is possessed by few. But it was his fiery enthusiasm that was his most striking characteristic. In the privacy of domestic life, or in the street, he poured out his treasures new and old, and emphasized his points for or against the theory he was discussing, or the investigation in which he happened to be engaged. His meteoric brilliancy has now been quenched in the darkness, but there are many who will cherish it in their memory, and they will think of Arthur Gamgee as one of the most gifted men they have known.

Professor SCHÄFER has responded to our request by the following appreciation: Having known Arthur Gamgee during the whole of my scientific life, I can say without reserve—and all his friends, who are legion, will agree—that to know him was to love him. Any faults he may have had were on the surface and so transparent that they never in the least concealed the real nature of the man, which was an embodiment of earnestness and sincerity. He was essentially impulsive and an enthusiast, and, like all enthusiasts, would for the time being become wrapped up in the matter in hand. In all probability it was this quality of mind which enabled him to work so successfully at the subject which might chance to engage his attention—witness his work on protagon, on haemoglobin, and on temperature. But enthusiasm has its disadvantages as well as its advantages, chief amongst the former being the tendency to overshoot the mark and arrive at a conclusion not always completely warranted by observation. If, however, this ever happened with Gamgee, he would himself be the first to acknowledge the error, for he was truthfulness itself. Gamgee was a brilliant conversationalist, possessed of erudition far above the average, and of an originality which might almost be said to constitute genius. His loss will be felt by physiologists all the world over, and his friends will long miss his striking personality and the sympathetic interest which he took in their work and welfare.

C. ERNEST BAKER, M.B., B.C.CAMB., F.R.C.S.ENG.,

KENSINGTON.

ON Sunday, March 28th, the death occurred of Dr. C. Ernest Baker under very sad circumstances. He died at 5, Gledhow Gardens, South Kensington, where he had been in practice for the last fourteen years. He had not for some time been a good sleeper, and was occasionally

much troubled with sleeplessness, but only very rarely, and under medical advice, did he take any narcotic drug. On Friday, March 26th, a medical friend strongly advised him to take a dose of veronal, but he did not do so that night. On Saturday, March 27th, on going to bed he took a tablet (5 grains) and a half of veronal, and slept all through the night. At 8 a.m. on the following morning it was impossible to rouse him. In spite of the untiring efforts of two medical friends, he never recovered consciousness, and died at 2.30 p.m. the same day. The news of his death came as a great shock to his friends, as up to the last he had been actively engaged in his practice, which had never been interrupted by ill-health.

Charles Ernest Baker was born in 1864, and went up to Cambridge from Haileybury in 1883. He graduated B.A., taking a first class in the Natural Science Tripos in 1886. In 1886 he entered St. Bartholomew's Hospital, where, after a most successful career as a student, he held the office of House-Surgeon. He took the degrees of M.B., B.C. in 1890.

He held resident appointments at the Royal Free Hospital, the East London Hospital for Children, and the Royal Orthopaedic Hospital, and in 1893 took the diplomas of F.R.C.S.Eng., and the D.P.H.Camb. He married in 1895 Ada Marion, third daughter of Sir Thomas Smith, and began general practice at 5, Gledhow Gardens. Always eager to qualify himself as fully as possible for his life's work he worked as Clinical Assistant at the Royal Eye Hospital, Southwark, for four years whilst in practice.

Charles Ernest Baker was beloved and respected by all who knew him for his kindly, simple, and straightforward nature. These strongly marked characteristics, together with his ability, sound commonsense, and whole-hearted zeal for the welfare of his patients, made him an ideal general practitioner. His memory will remain with those who knew him as that of a man of the most lovable disposition, who took his profession seriously, and having sought strenuously to qualify himself for it, went straight forward in his practice of it with unfailing good judgement, probity, and kindness of heart.

MAJOR JOHN SIMPSON EDYE, late R.A.M.C., who died from cholera at Bengal on February 22nd, was the eldest son of Captain J. Edye, C.B., R.N. He took the diplomas of L.S.A. in 1885, M.R.C.S.Eng. in 1886, and L.R.C.P.Lond. in the following year. Major Edye entered the army in 1886 and retired in 1907; he saw active service in the South African war, receiving the Queen's medal and four clasps. He held the appointments of Special Plague Health Officer, and Senior Medical Officer at Cawnpore.

MR. JOHN KERSHAW, formerly of Royton, died on February 14th, in his 68th year, at his residence at St. Anne's-on-Sea, where he had lived since his retirement. He received his medical education at Manchester, and obtained the diplomas of L.R.C.P.Edin. and L.F.P.S.Glas. in 1867, and that of L.S.A. in 1868; in 1874 he became F.R.C.S.Edin. He was formerly medical officer of health for Royton and was a member of the British Medical Association. His will which has now been proved contains directions of general interest. Apart from a request that his remains be cremated without religious ceremony and that no outward sign of mourning be displayed at his house or by any of his relatives or friends, the will establishes a trust for a sum arising from the residue of his estate. This is estimated to be about £50,000, and is to be devoted towards the establishment and maintenance of a general hospital and infirmary in the township of Royton, and if possible on some part of the testator's Sunfield estate. The institution is to be free to all applicants, no inquiry being made as to their religious beliefs or practice. Furthermore, no clergyman or minister of religion, nor any socialist or person known to hold or profess socialist opinions, can at any time be a trustee, director, or manager of the institution to be established.

THE Turin Academy of Sciences offers a prize of £372 for the most important discovery or the best work in the domain of physics, natural science, or physiology. Intending competitors must send in their statement of claim on or before December 31st, 1910.

Public Health AND POOR-LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Borough of Richmond (Surrey).—The Medical Officer of Health (Dr. J. H. Crocker) states that the population in 1908 was 35,415, the birth-rate 17.2, and the death-rate 12 per 1,000. The infantile mortality-rate was equal to 106 per 1,000 births. Of the 65 children who died under 1 year old, as many as 56 were under the age of 6 months. In the last quarter of the year an outbreak of scarlet fever among children attending public elementary schools resulted in the notification of nearly 100 cases of the disease, of which number 86 per cent. were removed to the isolation hospital. Several schools were closed for short periods, but Dr. Crocker is of opinion that the chief cause of the spread of the disease throughout the district was the difficulty in getting hold of unrecognized cases. The disease was of so mild a type that the nature of the illness was not realized until the peeling stage had arrived. Appended to the report is a section dealing with the cleansing of schools. Dr. Crocker states very clearly how the school cleaners should carry out their duties, and the school managers will be well advised if they insist upon the work of the cleaners being carried out in the manner suggested by the Medical Officer of Health.

Borough of Keighley.—Calculated on an estimated population of 45,720, the birth-rate was 20.6, and the death-rate 14.5. The infantile mortality-rate was equal to 134 per 1,000 births. The most noticeable feature of the report is the record of the steady fall in the rate of infantile mortality. Ten years ago this rate was equal to 171 per 1,000 births. The medical officer of health (Dr. Scatterty) attributes the great improvement which has taken place in large measure to the employment of a woman health visitor, who has been assisted by voluntary helpers. Of the latter there are 6 superintendents and 30 helpers. Cards are sent each week from the Town Hall to the superintendents, giving particulars of the births notified. These particulars are distributed among the helpers, who visit the houses concerned as often as the circumstances of the case demand. Of the 648 babies visited, only 56 were bottle-fed from birth. The mortality of these was 22 per cent., and of the breast-fed children it was 10 per cent.

VACANT POOR-LAW MEDICAL APPOINTMENTS.

A. H. F. writes to ask what he is to do under the following circumstances: A medical practice seven miles away from him has been recently sold. The vendor of this practice had for many years past held two district medical appointments, and had been public vaccinator for the same two districts. All these appointments have now been given to the vendor's successor in practice notwithstanding the fact that our correspondent applied for appointment to the district in which he himself resides, and in which he is the only resident practitioner.

*** As our correspondent is the only resident in the district for which he applied to be appointed medical officer, we consider he had a prior claim to the medical appointment in question, and as no reason has been assigned for his not having been appointed, he might at once write to the Local Government Board before the appointment is confirmed, drawing attention to the application he made to the guardians for the district medical appointments and his reason for so doing.

The Services.

ROYAL ARMY MEDICAL CORPS (TERRITORIAL).

COURSE OF INSTRUCTION.

WE are asked to announce that Captain Langford Lloyd, D.S.O., R.A.M.C., will commence an afternoon class of instruction for medical officers on Monday, April 19th, at 4.30 p.m. The course will extend over about six weeks, and at the first meeting the days and hour will be fixed upon. It will be held at 51, Calthorpe Street, W.C., and will be open to medical officers of both the First and Second London Divisions, and will be specially adapted for those who are about to present themselves for examination for promotion.

SOUTH MIDLAND DIVISION.

A review of the local Territorial units of the South Midland Division was held by General Sir Ian Hamilton, K.C.B., on Saturday, April 3rd. About 5,000 officers and men took part in the march past, the column being about 2½ miles in length. The following units of the Royal Army Medical Corps took part in the proceedings: First South Midland Mounted Brigade Field Ambulance, commanded by Captain W. H. Stephen, 2 officers, and 100 men; Third South Midland Field Ambulance, commanded by Major A. R. Badger, 7 officers, and 100 men; Second South Midland Field Ambulance, commanded by Lieutenant-Colonel C. T. Griffiths, 6 officers, and 100 men; First Southern General Hospital, commanded by Major J. E. H. Sawyer, 25 men.

Letters, Notes, and Answers.

BRITISH MEDICAL ASSOCIATION AND BRITISH MEDICAL JOURNAL.

THE offices of the British Medical Association and of the BRITISH MEDICAL JOURNAL are at 429, Strand, London.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

L.R.C.S.E. asks for experience of the Wolf motor bicycle (Wearwell Company).

ANSWERS.

STATISTICAL METHODS.

G. AUSTRALIS.—The most recent and best small book on statistical methods and their application to biology and medicine is *Frequency Curves and Correlation*, by W. Palin Elderton (London: Leyton Bros.), price 7s. 6d. Our correspondent might also consult the paper on Correlation by Mr. G. U. Yules published in the *Journal of the Royal Statistical Society* about 1900. Elementary proofs relating to probable errors and correlation will be found in the various volumes of *Biometrika*, i to vi, as well as a great number of tables useful in calculating which are not available elsewhere.

BOOKS FOR THE M.D.LOND. AND M.R.C.P.

P. C.—The following works on the subjects indicated might answer our correspondent's requirements:—For the M.D. (Medicine): Osler's *Principles and Practice of Medicine*. Sixth edition. (London: S. Appleton. 1905. 21s.) Frederick Taylor's *Manual of the Practice of Medicine*. Eighth edition. (London: J. and A. Churchill. 1908. 16s.) Rolleston's *Diseases of the Liver, Gall Bladder, and Bile Ducts*. (London: W. B. Saunders and Co. 1905. 25s.) Goodall and Washbourn's *Manual of Infectious Diseases*. Second edition. (London: H. K. Lewis. 1908. 14s.) (History of Medicine): Withington's *Medical History from the Earliest Times*. (London: Scientific Press. 1894. 12s. 6d.) (Pathology): Hewlett's *Pathology, General and Special*. Second edition. (London: J. and A. Churchill. 1907. 10s. 6d.) For the M.R.C.P.: Celsus should be read, but beyond this there is no special book.

LETTERS, NOTES, ETC.

SOUTHWOLD LIBEL CASE.

THE following additional subscription has been received towards this fund, which is being raised to help Drs. Mullock and Tripp to defray the heavy damages and costs (amounting to £1,005) in the recent action which they were called upon to defend:

	£	s.	d.
Dr. Kirby, Cairo	2	2	0

Three subscriptions have also been received from laymen, one for £5 5s., another for £5, and a third for £1 1s.

Cheques should be made payable to Dr. H. P. Helsham, Beccles, or to Dr. W. Tyson, The Beeches, Lowestoft.

TAX ON NOSTRUM ADVERTISEMENTS.

M.O.H. writes: I would suggest to the Chancellor of the Exchequer a tax of 25 per cent. on the cost of all newspaper advertisements of nostrums purporting to cure or prevent any kind of disease. I have roughly worked out that this would bring in £250,000 a year, and would be easily collected, as the newspapers would charge the advertiser for the tax and forward the amount to the Exchequer. Local authorities might be allowed to issue a stamp to affix to posters of similar advertisements. Possibly ½d. per sq. ft. would bring in enough money to pay for the proper treatment of the eyes and teeth of school children.

THE DEVELOPMENT OF THE PARASITE OF ORIENTAL SORE.

CAPTAIN W. S. PATTON, I.M.S. (Stoke St. Gregory, Taunton), writes: In the BRITISH MEDICAL JOURNAL of April 3rd, which reached me this morning, I note that Professor Minchin draws attention to Dr. Row's successful cultivation of the parasite of oriental sore, which has already been announced to the medical profession in this JOURNAL, March 20th, p. 746. Professor Minchin states in concluding his note that he believes "this is the first time that the parasites of oriental sore have been successfully cultivated up to the flagellate stage"; this is, however, not true. If Professor Minchin will refer to the *C. R. de l'Académie de Sciences*, Paris, tome cxl, April 13th, 1908, p. 482, he will find a paper by M. Ch. Nicolle entitled, Culture du Parasite du Bouton d'Orient, where he can read that this, or a very similar parasite, was cultivated a year ago by Nicolle from 3 cases of oriental sore contracted at Tebessa, Algiers. A summary of this paper was published in the *Bulletin* of the Pasteur Institute, No. 9, May 15th, 1908, by Professor Mesnil. Nicolle states he cultivated the parasites on a medium prepared in the following simple way: "Gélose 14 grain, sel marin 6, eau 9,000, reparti dans des tubes et stérilise, on ajout ¼ de sang de lapin." Professor Minchin suggests that, as Dr. Row failed to obtain any development in sodium citrate, it indicates that their mode of transmission and development is also different. I presume that Professor Minchin here indicates that the natural development of this parasite is not likely to take place in a blood-sucking insect whose digestive juices are acid. I am assuming that Dr. Row used a slightly acid sodium citrate solution. This statement of Professor Minchin with regard to the natural development of the parasite is hardly justified from the limited number of experiments carried out by Dr. Row. It is quite obvious that the parasite of oriental sore must have a flagellate stage, but what we want to know is not so much whether it will develop in one particular kind of medium or another, but in what particular blood-sucking insect it takes place. In a recent paper (*Lancet*, January 30th, 1909) I pointed out that these cultural experiments are undoubtedly interesting, but they will not help us in discovering how these parasites are transmitted in nature. This can only be accomplished by carrying out a number of feeding experiments with suitable blood-sucking insects.

FOREIGN DRUGS.

SCOPARIUS writes: Is it not time that the fashion (for it is, in the majority of cases, little more than a fashion) of prescribing synthetical remedies chiefly manufactured abroad gave place to a more extended use of wholesome home-grown and home-manufactured drugs? During the past twenty-five years I have carefully tried both, and have largely given up using the former; and I find that by using British drugs my patients do just as well if not better, the saving in the drug account being as much as 50 per cent. in some years.

PRIZE FOR ORTHOPAEDIC SURGERY.

THE second competition for the Umberto I Prize was officially declared open on January 1st. The prize, which is of the value of £140, will be awarded in accordance with the decision of the provincial council of Bologna, for the best work or the most useful invention in the province of orthopaedic surgery. Foreigners as well as Italians may compete. Intimation of intention of entering should be sent to the President of the Rizzoli Orthopaedic Institute at Bologna. The competition will close on December 1st. Three copies of printed or manuscript works, either unpublished or published within the five years preceding the date of closure of the competition, should be sent. Apparatus or instruments should be accompanied by explanatory notes subject to the same conditions. The notes may be written in Italian, French, German, or English. No works which have previously been awarded a prize will be admitted.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication; and, if not paid for at the time, should be accompanied by a reference.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.